GLOBALIZATION, CHINA AND THE IMPLICATIONS FOR THE NEWFOUNDLAND AND LABRADOR FISHING INDUSTRY

BRIAN J. DELANEY

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Globalization, China and the Implications for the Newfoundland and Labrador Fishing Industry.

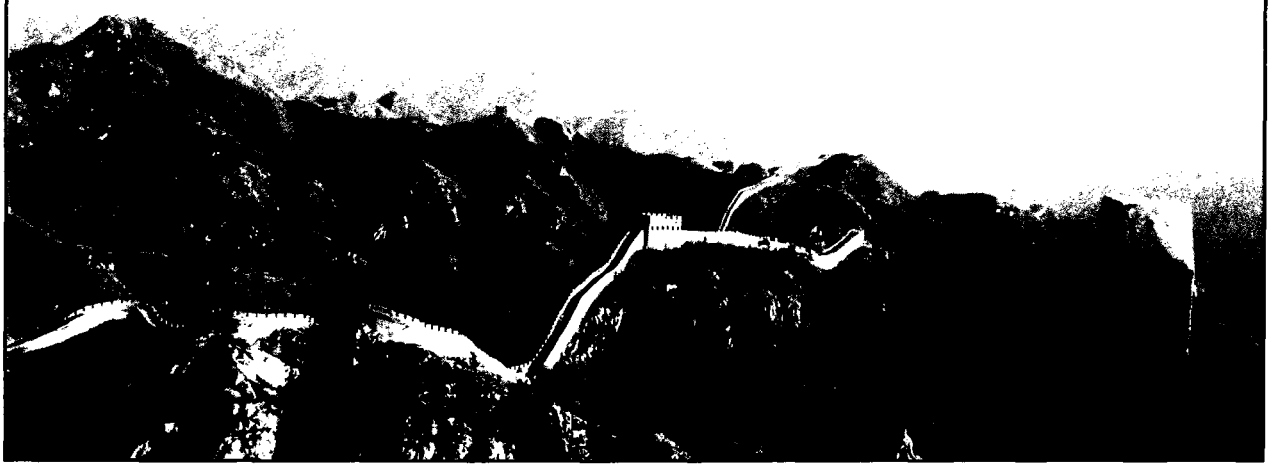
By

Brian J. Delaney

Submitted to the School of Graduate Studies in partial fulfilment of the requirements for the degree of Master of Marine Studies (Fisheries Resource Management).

Memorial University of Newfoundland
St. John's, Newfoundland and Labrador,
July 26, 2007

Globalization, China and the Implications for the Newfoundland and Labrador Fishing Industry.



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Brian Delaney

Table of Contents

1.0 Introduction 1
1.1 The Current Environment 7

2.0 The Path of Globalization 11
2.1 The Current Round of Globalization 13

3.0 Overview of China 19
3.1 China as a Major Fishing Nation and Competitor. 24
3.2 China as a Market for Seafood 32
3.3 Challenges to the Chinese Economy: Is the growth Sustainable? 37

4.0 The Newfoundland and Labrador Fishing Industry 40
4.1 The Regulatory Environment 43
4.2 Seasonality and Capacity Issues. 46
4.3 Overview of the Harvesting Sector 49
4.3.1 Harvesting Capacity 52
4.4 Overview of the processing Sector. 53
4.5 Collective Bargaining 56

5.0 Industry Response to Globalization 30
5.1 The Big Get Bigger 62
5.2 Newfoundland and Labrador's Relationship to China 65

6.0 Conclusions 68

References 75

Appendix I List of Federal and Provincial Regulations.

List of Figures

Figure 1 Fish Landings by Species Group, Newfoundland and Labrador, 1989-2005 7
Figure 2 World Inflows of Foreign Direct Investment, 1970-2005 14
Figure 3 Inflows of Foreign Direct Investment to China, 1985-2005 15
Figure 4 Cross-Border Mergers and Acquisitions Valued at over $US 1 billion, 1987-2005. 16
Figure 5 World Merchandise Exports, 1948-2005. 17
Figure 6 World Seafood Exports, 1976-2004. 17
Figure 7 Chinese Industrial Output by Type of Enterprise 1980, 2002. 20
Figure 8 Annual GDP China, Constant$, 1980-2006 22
Figure 9 Annual Percentage Change in GDP, China, 1980-2006. 20
Figure 10 Annual GDP Per Capita and GDP Per Capita Based on Purchasing Power Parity, China, 1980-2006 22
Figure 11 Chinese Aquaculture and Capture Production, 1978-2004 24
Figure 12 Seafood Exports from China, 1991-2004. 25
Figure 13 Seafood Exports From China by Major Species Group, 1976-2004 26
Figure 14 Groundfish Plant, Qindao, China. 27
Figure 15 Seafood Consumption in China, 1991-2002. 32
Figure 16 Per Capita Seafood Consumption in China, 1991-2004 33
Figure 17 Retail Sales of Consumer Goods in China, $US, 1978-2004. 34
Figure 18 Handcarts at Wholesale Food Market in Beijing. 36
Figure 19 Monthly Employment for Fish Plants (Hours) Versus Wind Speed Less than 20 Knots, Newfoundland and Labrador, 2002. 46
Figure 20 Monthly Landings by Fleet Sector, Newfoundland and Labrador, 2005 49
Figure 21 Fishing UI/EI Benefits Paid, Newfoundland and Labrador, 1999, 2003 51
Figure 22 Value of Seafood Exports to China, Newfoundland and Labrador, 1991-2005 65
Figure 23 Snow crab leg and claw meat pack on display at Seafood Show in Qingdao. 66

List of Tables

Table 4.1 Average Days at Sea for Fishing Vessels by Boat Size 52

Abstract

This report reviews issues associated with globalization and specific challenges to the seafood sector in Newfoundland and Labrador. China has emerged as a major fish processing nation and is challenging developed nations. Low labour rates, high capital utilization rates and easy access to capital make China a formidable competitor. At the same time, inefficiencies within the Newfoundland and Labrador inshore sector challenge the industry to respond in this difficult environment. The industry has begun to adjust, however, structural challenges remain and this will likely limit the ability of the industry to adjust in the long term. This has implications for the long term survival of many fisheries dependent communities in this province.

1.0 Introduction

The dramatic changes that have occurred in the world economy since 1980 are beginning to have profound effects on the world's manufacturing sector. Changes in the flows of capital, as well as political and structural changes within developing countries such as China and changes in the world's manufacturing sector are forcing developed countries to rethink how they do business. These factors are no less prevalent in the world's seafood industry and the industry players in this province must come to terms with the challenges or risk losing any comparative advantage that may exist.

Being export dependent with approximately 90 percent of the fish produced exported outside the province (DFA, 2007a), the globalization challenges are most relevant to this province's fishing industry. Income earned by the harvesting sector is derived from the economic returns fish processors are able to garner from the market place. Harvesters provide access to raw material and fish processors provide access to markets. These two groups are strongly linked together; however, often they work against each other. Furthermore, processors in this province often face the strongest competition from other operators within the province. Instead of working together the Newfoundland and Labrador industry faces the world divided and easily falls prey to the large companies waiting to play one firm against the other, as they attempt to maximize profits.

The reasons for this dysfunctional relationship stem from the structure of the province's industry. This structure limits the ability of the industry to respond to the challenges it faces. The industry is extremely seasonal resulting in lower quality product being landed often at the wrong time of the year. Without a stable raw material supply processors compete against each other both at the wharf and in the marketplace as they quickly sell product to cover the high working capital costs associated with glut or bonanza style fisheries.

When the industry is desperately trying to compete in a competitive international market, it must garner the maximum from the resource and at the same time it is necessary to have a similar or better cost structure in order to compete. Furthermore, the focus of the industry on internal activity at home diminishes its effectiveness internationally. More effort is spent acquiring raw material and quickly selling product rather than actually marketing products and developing products that maximize value. The lack of coordination of activity between harvesters and processors results in huge gluts, over-capacity and ultimately a loss of economic rent.

Many of these structural issues directly result from federal and provincial government policies that guide activity. The harvesting sector faces a barrage of regulation that is focused at limiting capacity, harvesting methods, timing of landings, and vessel and enterprise ownership. The provincial government regulates price setting, plant licensing

and requires minimum processing of certain species. This regulatory framework results in an inefficient system (See Appendix I for a list of regulations).

These government regulations have evolved over the years under the rationale of protecting the resource or protecting employment. As well, many of the regulations in place are in response to the requests of industry players. These players do not always have the best interests of the industry as a whole in mind but often represent their own self-interests. Furthermore, considerable effort appears to be spent by industry players finding ways to circumvent regulation. This in and of itself creates inefficiencies and often results in more regulation as a government response.

Moreover, the industry itself is somewhat of a paradox with two very distinct offshore and inshore sectors. The offshore sector is a small number of firms that are vertically integrated with stable access and allocation rules and little government intervention into daily operations. The inshore sector, however, is characterized by a large number of firms, an absence of vertical integration and a system closely managed by two levels of government.

There is an Enterprise Allocation (EA) structure for the offshore sector that allows complete vertical integration. Companies can hold quotas and have a generally predictable raw material supply. They are able to plan harvesting to match plant or even market needs. The competitive fisheries of the past had resulted in a number of crises

throughout the 1970s and 1980s and demonstrated the need for companies to have control over their raw material in order to properly plan their businesses. Under the EA regime established companies are able to decide when to harvest, how to process, and how and where to sell. The model was very successful until the moratoria on groundfish stocks. This sector now finds itself without a sufficient resource base to efficiently operate groundfish processing facilities. Its shellfish operations, while often challenged by market conditions, have from all indications, remained viable operations.

The inshore sector represents the majority of the current industry. This sector, however, does not allow vertical integration, is highly seasonal, is closely regulated and tends to move from crisis to crisis. This report will focus on this sector.

I have been actively involved through various capacities in most of the major studies of the industry and its components over the past 10 years. These include the Vardy reports on Collective Bargaining (1998) and Inshore Shrimp (2002), the Dunne Report on Processing (2003), a report on Corporate Concentration (2001), the Jones Report on Collective Bargaining (2003) and the recent Cashin Report on Raw Material Sharing (RMS) (2005). Furthermore, I have sat around the table with many of the major players in the Newfoundland and Labrador industry in my capacity as an employee with the provincial Department of Fisheries and Aquaculture. What is clear is that all parties recognize the monumental challenges before us and often all parties can reach a

consensus on what must be done[1]. It is when it comes time to implement change that bold initiatives become dismal failures.

Richard Cashin in his 2005 report clearly summed up the state of the industry:

> *This is at least the fifth major fisheries crisis that I have been involved with in the past forty years. Many of the issues are still the same, except in some ways, they have gotten worse. Therefore I am fearful for the future of this industry if we allow the significant underlying problems of the past to remain unsolved. This situation is exacerbated by the considerable and debilitating distrust that still exists between the parties and the uncoordinated management decisions and actions of both levels of government.* (Cashin, 2005. p.46)

This report will attempt to highlight the major structural problems found in our industry and more specifically, the inshore sector. It will not be a complete review given the limitations associated with this type of paper. It will focus on the major issues that affect the Newfoundland and Labrador harvesting and processing sectors. This will include issues within each of these sectors and the general implications of these issues for the industry.

It is the relationship with and dependence on international markets that make Newfoundland and Labrador producers vulnerable to forces that they have no control over. The industry must respond to the forces of globalization if it is to remain a central part of the rural economy. China with its cheap labour is a major force to reckon with in

[1] One good example of this behavior is the implementation report associated with the 2001 Inshore Shrimp Panel. All parties recognized the work required; however, the parties first backed away when it became time to implement the strategy. Once an agreement was established, many of the recommendations were ignored and the end result was the collapse of the system after one season.

the world economy. Competing fish producing nations with structures conducive to change have an advantage over the Newfoundland and Labrador industry. As part of this work it is necessary to define globalization, show how it has manifested itself and trace its development over time. It is only through an understanding of the dynamics at play with regard to globalization and the problems in the industry that solutions can be proposed.

This report is broken down into five main sections. Section One is a general introduction and provides a general overview of the Newfoundland and Labrador industry. Section Two discusses globalization and the trends in world trade.

Section Three provides an overview of China and the issues and trends associated with China becoming a major fishing nation and manufacturing powerhouse. Section Four discusses specific issues that impede Newfoundland and Labrador's adjustment to globalization. Section Five is an overview of how the seafood sector and the food sector have responded to globalization.

Section Six will provide a summary and conclusions section that will hopefully provide some insight into a way forward for the industry. It is clear that without change the Newfoundland and Labrador seafood sector will be challenged to remain an important part of the lives of many people in rural Newfoundland and Labrador.

1.1 The Current Environment

The Newfoundland and Labrador fishery has changed considerably over the last sixteen years. The industry has changed from a sector dominated by groundfish to one where shellfish is the principal species group. Moratoria on key groundfish stocks such as northern cod have resulted in overall lower landings while at the same time the landings of higher priced species such as crab and shrimp have increased substantially.

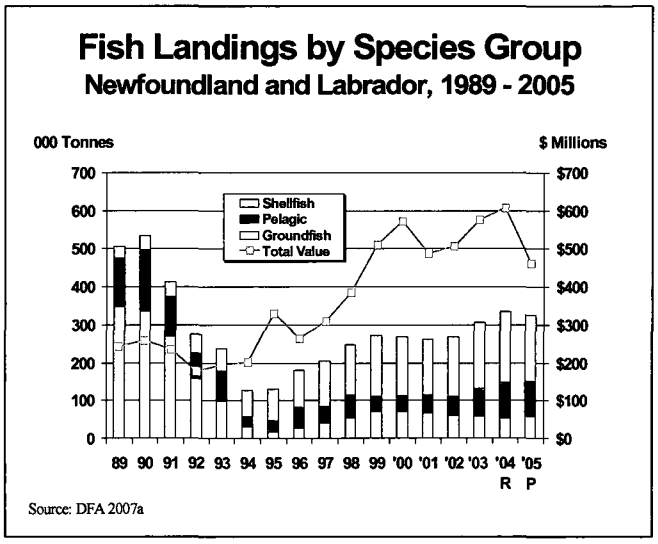

Figure 1

The value of fish products landed in 2005 was $484 million with a corresponding production/ market value of approximately $1.0 billion. The total landed value of the industry peaked in 2004 at over $606 million. In comparison, the nominal landed value of the entire industry did not exceed $300 million in any period prior to the moratoria (DFA, 2007a).

The past two-three years have been difficult for the fishing industry. The industry had experienced a period from 1997 to 2004 of high prices for snow crab and relatively stable crab quotas. Snow crab had been the cash generator for both the harvesting and processing sector at a time when most groundfish stocks remained under moratoria. Just

at the time that TAGS (The Atlantic Groundfish Strategy) payments were running out, snow crab landings increased, prices rose and the exchange rate moved in the province's favour.

Since 2004, the industry's fortunes have somewhat reversed. Crab quotas have declined, market prices for snow crab have dropped and the appreciation of the Canadian dollar against the US dollar has resulted in lower returns for the industry. When times were good, the extra cash generated by the snow crab sector offset many of the problems and inefficiencies found in the industry. Indeed, it can be said that snow crab effectively cross-subsidized all other fisheries including cod, other groundfish and shrimp in the inshore sector. With the recent decline in market returns and the challenges brought by globalization, the industry must re-invent itself in order to survive in the long term. While prices have partially recovered in the snow crab fishery in 2007, exchange rate pressures remain and this will continue to impact industry margins.

While the revenue from snow crab has dropped, the appreciation of the Canadian dollar and stiff competition from China has impacted the groundfish sector. This is evidenced by the recent closures of groundfish plants in Harbour Breton and Fortune. Furthermore, FPI, the owner of these facilities, called for wage concessions before it would reopen its Marystown facility. The contract for Marystown is the same contract for all FPI plants and as such concessions were sought across all the company's operations. The former National Sea plant in Arnold's Cove has faced similar circumstances and wage

concessions and other assistance from governments were provided. Most of these plants were originally based on fish supplied from the offshore sector and have had to restructure and change their business model since groundfish stocks collapsed.

The stresses found in the groundfish sector are a function of the structure of the industry and the competition from China. The Marystown facility, for example, does not appear to have sufficient raw material to make the operation a going concern. While FPI has an Enterprise Allocation, the total amount of fish available is about 20,000 tonnes spread over a number of species. The largest single allotment is only 13,000 tonnes of yellowtail flounder. The volume is insufficient and forces the company to operate a large factory for only a small portion of the year. This places the company at a significant disadvantage given its competitors in Iceland, China and other countries often run operations with three to four times this amount of fish.

In May of 2006, Premier Danny Williams held a summit at the Fairmont Hotel to discuss the many issues facing the fishery. Attendance at the meeting included representatives from all areas of the industry including harvesters, plant workers, processors, community representatives, and three levels of government. It was clear from the meeting that there was a general recognition that the industry must change in order for it to become competitive, that there is overcapacity in the processing and harvesting sectors and that community expectations have to change (DFA, 2006a).

While these sentiments were expressed at that meeting, the industry has not shown an ability to change or to change quickly. The problems in the fishery are well known and so are the solutions. Indeed, the main solution found for the offshore sector facing similar difficulties in the 1980s was to provide for a predictable supply of raw material and to allow vertical integration (Kirby, 1982). In the absence of similar changes in the inshore sector, the challenge will be to set a foundation for long term prosperity. While globalization offers many challenges for the fishery in this province it also provides unprecedented opportunities.

2.0 The Path of Globalization

The term globalization can mean many different things to different people. In the context of the fishing industry, it is suggested that it refers to interaction of national and international fish companies as fish products are harvested and sold to consumers around the world. Product is often sourced from many different countries for the same market. At the same time, retailers have grown larger thereby giving them an influence on product prices and specifications. Some seafood companies, to counteract this market influence, have begun to respond by consolidating. As well, there has been a trend of reducing processing costs by outsourcing the manufacture of products to low cost areas such as China.

The above definition of globalization; however, is a very narrow microeconomic interpretation of globalization. The process is far more complex and far reaching. As will be shown from the data compiled for this report and from research, the free movement of capital over the past thirty years, combined with the liberation of international trade laws, are key factors in the current round of globalization. This has affected many regions of the world. Some regions have benefited while others have not.

Das (2004) indicates that there are easily about 100 different known definitions of globalization and within these definitions there are many dimensions. He defines economic globalization as the *process of liberalization and integration of goods and*

factor markets (Das, 2004, p.6). In a broader macro context this definition fits well and aptly describes the situation currently faced by the world. There has been a liberalization of capital and an increase in the integration of developing nations into the world economy. Some developing nations are growing due to their access to capital and their low cost labour.

Frieden (2006) uses the terms globalization and global capitalism interchangeably and with it he attaches a substantive political dimension. He indicates that globalization was essentially a theoretical term with little progress after 1914 until the 1990s *(Frieden,2006, p. XVI).* The collapse of the USSR and the adaptation of a market economy by China have helped spur the latest round of globalization (Frieden, 2006).

In order to understand the current global environment it is necessary to determine if this is a long term phenomenon and the likelihood that the process will continue. Over the past four hundred years, the process of globalization has not taken a smooth even path. Das indicates that there have been different degrees of globalization and there are distinct periods. There was a period of globalization that followed the discoveries of Columbus and Vasco de Gama and from this there was an industrialization of Europe that followed (Frieden, 2006). As well, globalization was interrupted, for example, during the Napoleonic wars (1796-1815) and from 1919 to 1939 there was actually a period of reverse globalization (Frieden, 2006). The third period is the post WWII period.

The political turmoil that followed World War I, reversed free trade and the strong financial ties between countries that had been developed (Das, 2004). This is an important point to consider in this current debate over globalization. Globalization can be affected by political and military events. It can end and it can even be reversed.

2.1 The Current Round of Globalization

Post World War II, the world again began to globalize and economically integrate. Changing international policies and lower transport costs contributed to the recent periods of market integration (Das, 2004).

Since 1980, there have been a number of major developments that have again increased the trend of globalization. This includes the development of the General Agreement on Trade and Tariffs (GATT), its successor the World Trade Organization Agreement (WTO), political changes in major communist nations, and changes in capital markets and how currency rates are set (Das, 2004).

The GATT ran from 1947 to 1994 when it was succeeded by the Uruguay round under the World Trade Organization (WTO). The GATT had a number of iterations in this period. The first agreement saw 45,000 tariff reductions on $10 billion in trade. (WTO, 2007) The Tokyo round in 1979 saw further concessions such that the average tariff for industrial products was only 4.7 percent. The 1947 GATT still remains the cornerstone

agreement for trade with the subsequent agreement being referred to as GATT 1994 (WTO, 2007)

Structural changes within communist countries have also influenced trade. China has adopted some aspects of capitalism and has emerged as a major manufacturing nation. Similarly, the collapse of the Berlin Wall in 1989 and subsequently the communist government in USSR in 1991 have also spurred trade globalization (Das, 2004). The move of both China and Russia to market economies has helped spur increased trade and foreign investment in those nations.

The changes in international policies are evident in trade and investment data. Indeed, the increase in globalization is clearly demonstrated in the dramatic increase in international trade and changes in the flows of international capital. Foreign Direct Investment (FDI) has increased from $US 13.4 billion in 1970 to a peak of $US 1.4 trillion in 2000 (See Figure 2).

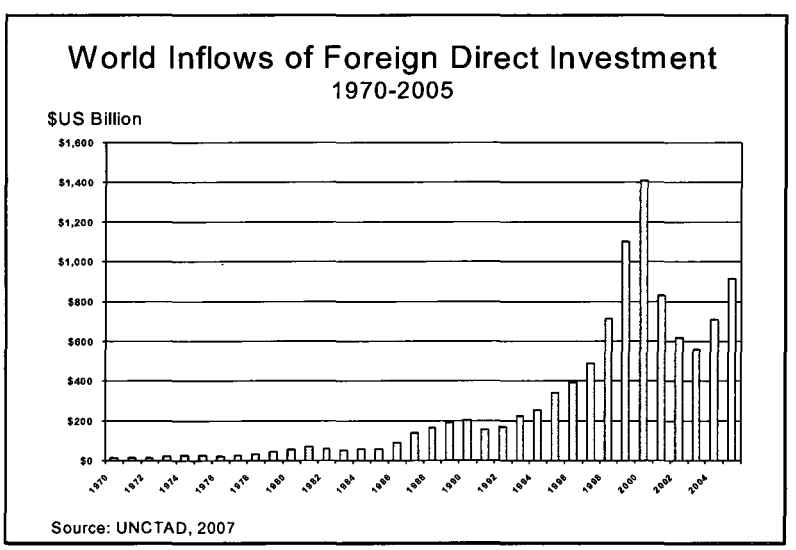

Figure 2

Increases in FDI bring cash and expertise to receiving nations. (Das, 2004). Intuitively, these large scale investments would carry with it expertise to oversee any investments made and protect these investments. The bulk of FDI is provided by Trans National Corporations (TNC) with investments in the 1990s from these companies representing 80 percent of FDI (Das, 2004).

In any discussion of foreign investment and globalization it is necessary to speak of the impact of Trans National Corporations (TNCs). There are approximately 77,000 TNC corporations with 770,000 foreign affiliates. TNCs are responsible for an estimated $4.5 trillion dollars in value added and employ 62 million workers worldwide (UNCTAD, 2006. p xviii).

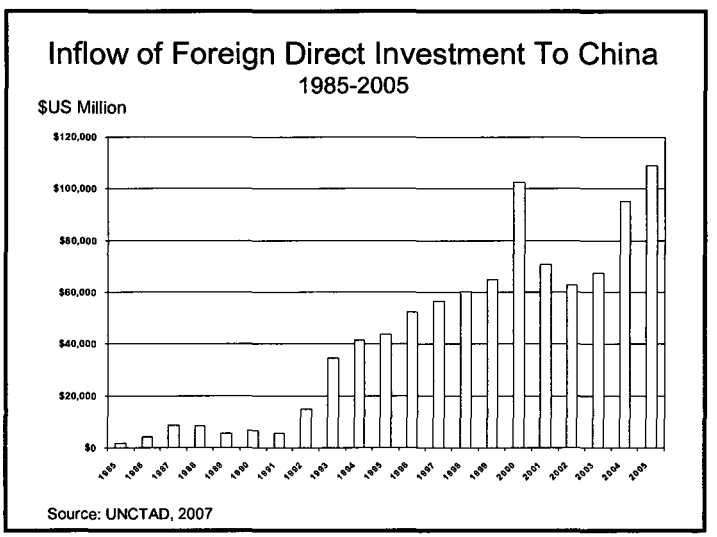

Figure 3

Figure 3 shows FDI to China from 1985 to 2005. FDI in China has been increasing steadily since 1992 with the largest absolute amounts seen in 2000 and 2005. As will be shown in the next section, the level of foreign investment in China corresponds to the increase in merchandise exports, GDP and the growth in seafood exports.

While FDI is increasing there has been a significant shift in corporate power as companies in all facets of the world economy merge. In 2005, for example, there were 6,134 cross- border mergers and acquisitions (M&As) that totaled $US 716 billion (United Nations, 2006, p.13). Of these, 141 mergers were each worth more than $1 billion and in total represented 63 percent of the total value of M&As (UNCTAD, 2006, p. 13-14).

The trend of increased cross border M&A activity, and the increase in the number of large transactions is a trend that accelerated since 1997. Figure 4 shows that peak M&A activity worth $1.0 billion or more occurred in 2000 with a value of $US 866 billion. The 1999-2001 M&A activity occurred primarily in the financial and service sectors whereas the latest round has occurred in the primary sectors such as mining and petroleum (UNCTAD, 2006). The data are reflective of the trends in the world economy over the past eight years and are indicative of the free movement of capital seen under this current round of globalization.

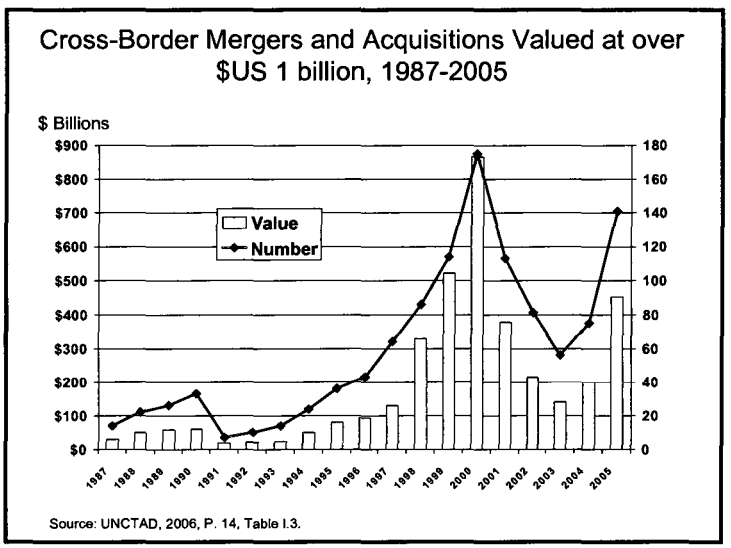

Figure 4

Corresponding to major policy changes and increased capital flows has been an increase in world exports that has been sustained since the 1980s. Total exports were $US 58

billion in 1948 and increased to $US1.7 trillion in 1979. From 1980 to 2005, trade as measured by exports, has increased from $US 2 trillion to $US 10.4 trillion in 2005 (See Figure 5).

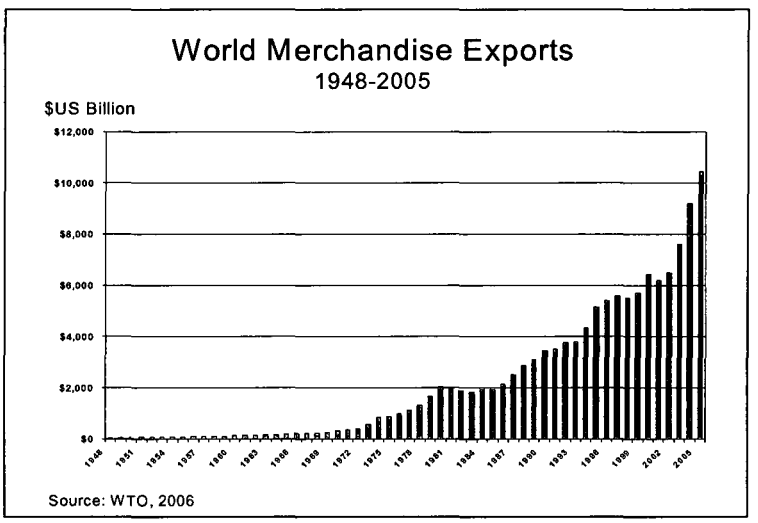

Figure 5

While merchandise exports have been increasing, the world export of fish has followed a similar trend. The total world exports of seafood have increased from about $US 8 billion in 1976 to $US71.7 billion in 2004 (FAO, 2004) (See Figure 6). This dramatic growth has been due in part to large increases in aquaculture production and the changing nature of the industry.

As well, employment in fisheries is most important in developing nations with 1.6 million people in OECD nations and 33 million in non-OECD countries (OECD, 2005, p.116).

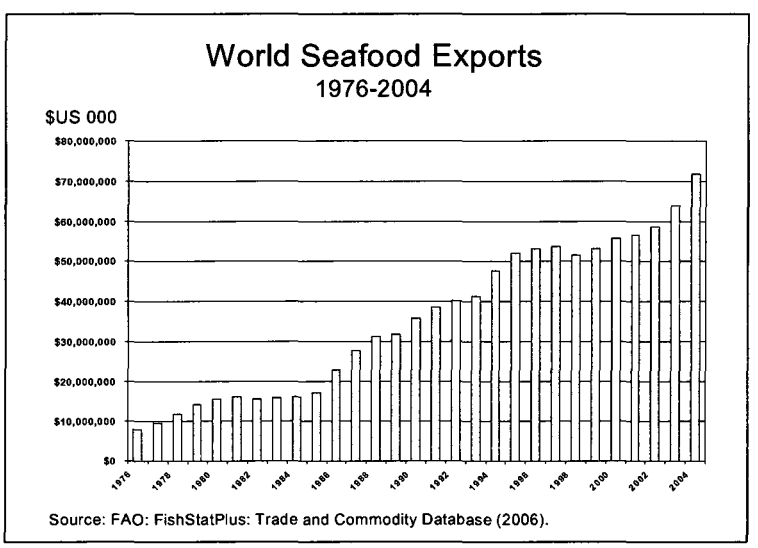

Figure 6

In summary, the current round of globalization has been a direct result of changes in international trade policies, internal changes within major communist nations and the free flow of capital resulting in high levels of FDI. This has resulted in huge increases in the export of manufactured goods including seafood products.

3.0 Overview of China.

Poverty is not socialism. To be rich is glorious: (Xiaoping, 2007)

China has led the world in GDP growth in recent years and it is one of the most populated nations in the world with an estimated 1.3 billion people and a working age population of 829 million (Nolan, 2004, p. 11). It is quickly consuming large proportions of the world's natural resources from metals and energy to foodstuffs and it is a leader in the production of a wide range of industrial and consumer goods (Leman 2005, p. 7, 20). As will be shown, it is now the largest fishing nation in the world and the world's largest fish processor.

The country, while still operating under a communist government, has embraced many aspects of capitalism. It is still considered a developing nation and many areas of the country remain extremely poor. It is the vast labour force and low relative wages that give China its competitive advantages. At the same time, its financial system provides for easy access to capital and as has been demonstrated, there has been a major flow of foreign direct investment into the country. This has contributed to the strong growth seen in the manufacturing sector.

China has been a communist nation since October, 1949 when the Communist Party, led by Mao Zedong seized power. Chairman Mao maintained an inward focus with China having little contact with the outside word. Mao focused on agricultural production and

introduced a series of land reforms that changed the face of China. Land ownership became a role of the state and even today, the state maintains the ownership of all lands. China has been largely a rural society and this was the basis for Mao's revolution. Many of the policies introduced by Mao were intended to make China self-sufficient in agricultural production (Fishman, 2006, p. 41-42).

The result, however, has been a proliferation of small unprofitable farms. The average annual income for farmers in some areas was about 20 Yuan ($US 2.60) (Fishman, 2006, p. 47) such that some farms area as small as one-eight of an acre (Fishman, 2006, p. 55).

As well, a system of intellectual property rights is not well developed or what is developed is not enforced. This has impacted on companies doing business in China and increases the level of business risk (Fishman, 2006, p.250).

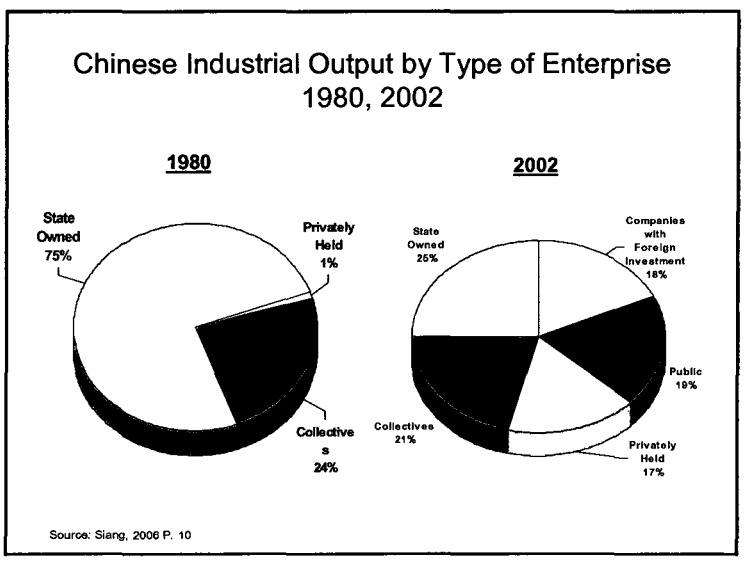

Figure 7

There has been a substantial change in focus of the economy from a centrally planned economy dominated by state controlled enterprises to an economy where the private sector has a greater role. Since 1980, China has moved from a corporate structure with state owned enterprises and collectives to a more private

sector oriented economy. In 1980, state owned enterprises represented 75 percent of all businesses and collectives represented 24 percent of enterprises (See Figure 7). In 2002, the role of state enterprises had declined to 25 percent of total enterprises. Private sector and public firms had increased to 34 percent and another 18 percent of enterprises were companies with foreign investment. While the state still maintains a substantive role, considerable progress has been realized (Siang, 2006). This shift in public to private ownership is an important factor in China's integration into the global economy.

As previously noted, the integration of world financial markets makes this round of globalization unique in a historical context. Furthermore, where once labour was mobile across nations and there was substantial immigration to regions such as North America, it is now the movement of capital that has influenced manufacturing output. China has been able to benefit from changes in the international environment and from substantive internal changes.

GDP in China has increased from $US 300 billion in 1980 to $US 2.5 trillion in 2006 (Figure 8). On an annual basis, GDP growth in China has ranged from 3.8 to 15.1 percent over this period (Figure 9). These growth

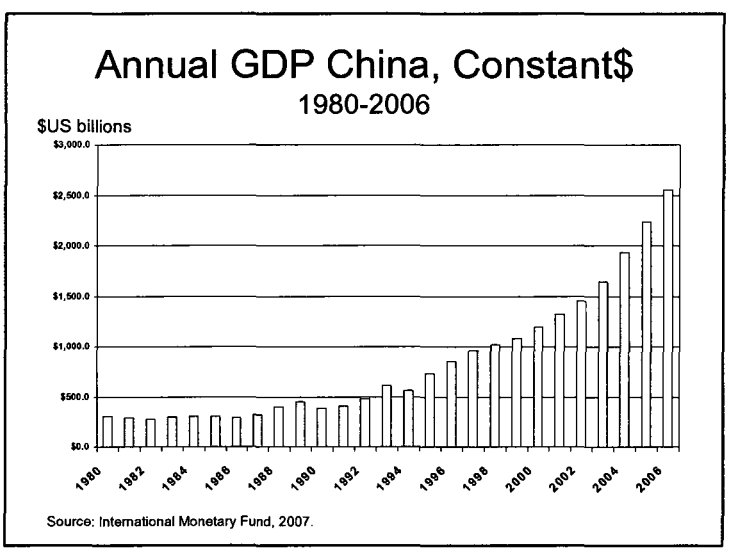

Figure 8

rates far exceed growth rates seen in developed nations during this time period. For example, based on IMF estimates, US growth rates ranged from -1.9 to 7.2 percent. Canadian growth rates ranged from -2.9 percent to 5.8 percent over the same 1980 to 2006 period (IMF, 2007).

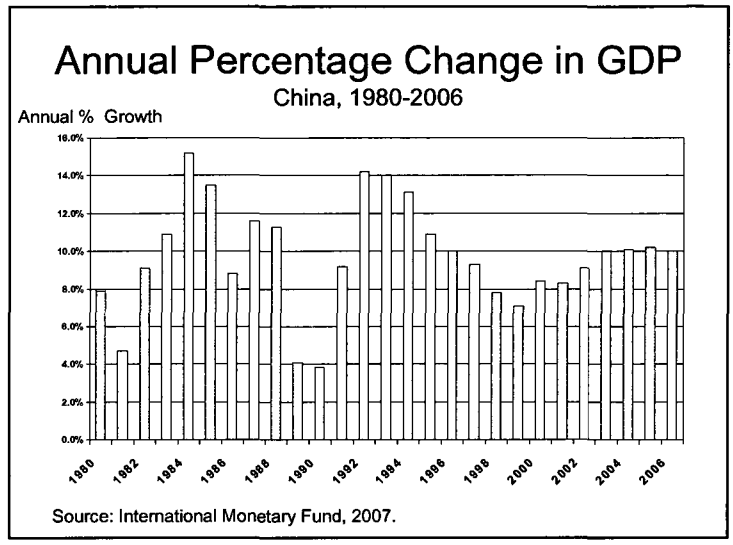

Figure 9

While GDP has grown at an astounding level, the country was underdeveloped and as such had significant room for movement. Essentially the country was poor and underdeveloped. On a per capita basis, GDP in China was one of the lowest in the world. GDP per capita in 1980 was $US 311 compared with GDP in the U.S. at $12,255 and $12, 844 per capita for Canada (IMF, 2007).[2]

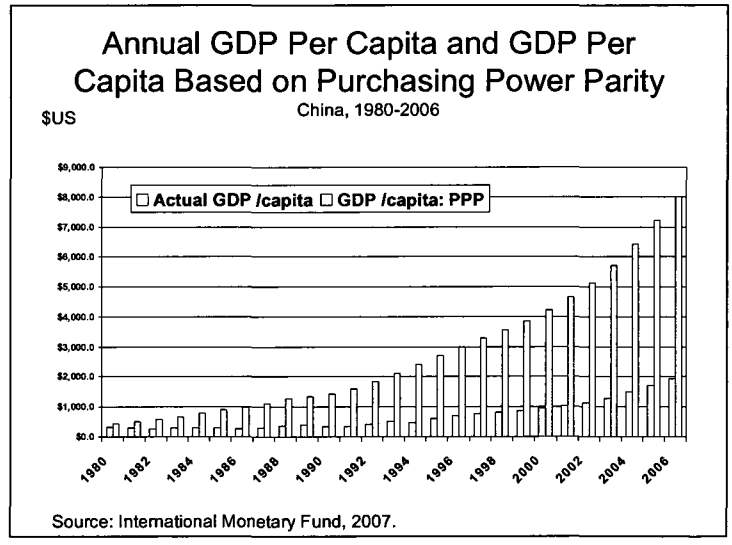

Figure 10

Incomes in different parts of the world can buy different quantities

[2] Of about 150 countries in the IMF database, the lowest GDP per capita was found in Chad at $147.

of goods based on the internal structures and relationships in a nation that may not be reflected in exchange rates. Economists have developed a means of equalizing the differences in exchange rates and currencies through a measure called Purchasing Power Parity (PPP). This estimator attempts to recognize that a unit of currency can buy a different basket of goods in different countries and is a means of comparing standards of living (Lafrance et al, p.27)[3]. The IMF estimates of the GDP per capita for China using PPP is approximately $8,000 compared to actual GDP per capita of about $1,900 [4] (See Figure 10). Simply stated, an international currency dollar earned in China can earn about $4.1 dollars of goods and services. This has implications for China as a market for seafood. Incomes do not have to increase to the same level as in developed nations to see changes in consumption patterns.

A substantial difference in incomes between urban and rural areas has contributed to a massive out-migration from rural to urban areas. Analysts suggest that between 90 and 300 million people have migrated from the country side to the cities (Fishman, 2006). This trend is evident in most countries throughout the world and even in Newfoundland and Labrador. Generally, analysts suggest that the pace of migration in China has been accelerated by the recent tempo of development and the disparity in incomes in rural

[3] Lafrance et al indicates that absolute PPP is obtained by extending the law of one price to multiple commodities in an international setting. Essentially, the same good being sold in one country should be purchased in another country with the same unit of currency. When there is a difference this measure attempts to capture this difference.

[4] In comparison, IMF estimates of GDP per capita in Canada is $47,206 compared with $37,321 on a PPP basis.

versus urban areas. This out-migration has helped provide the labour needed for the expansion of the manufacturing sector (Fishman, 2006).

At the same time, China has emerged as the world's largest fishing nation both in terms of its ability to harvest (capacity), its annual harvests of fish and its ability to process fish. As well, it has emerged as the World's factory for manufactured goods including seafood. It has negatively impacted manufacturing employment throughout the world (Fishman, 2006).

3.1 China as a Major Fishing Nation and Competitor.

Processors in this province have been facing stiff competition from China in both input and final product markets. Increased demand from China has bid up prices for raw material. At the same time their presence in the market place has resulted in stable prices for certain whitefish products such as cod. This, combined with exchange rate pressures, has placed local producers at a substantial competitive disadvantage.

Chinese production has expanded considerably since the change in communist

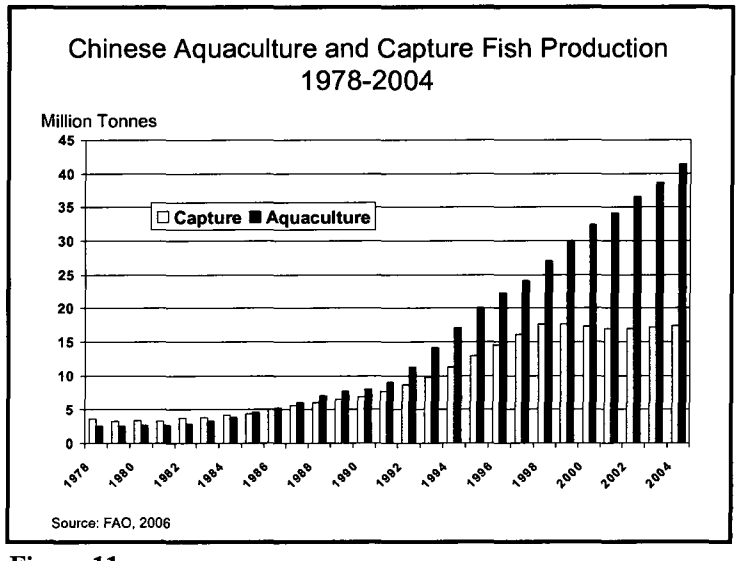

Figure 11

philosophy in the country in 1978. China represented nine percent of total world aquaculture and capture fisheries production in 1978; however, by 2004 this had increased to 62 percent (FAO, 2006).

Figure 11 shows that capture fish production has increased from 3.6 million tonnes in 1980 to 17.4 million tonnes in 2004. The FAO estimates that number of vessels in 1978 at 47,000 and by 1995 this had increased to 433,000. The total number of decked and undecked vessel had reached 991,000 by 1998 when landings peaked (FAO, 2006)[5].

The FAO estimates show that most of the growth in capture production fisheries occurred post 1988. The growth of fish harvests by China increased at a compound annual rate of 5.3 percent from 1978 to 1988[6]. From 1988 to 1998, however, the compound annual growth rate was 11.8%. Total Chinese landings peaked in 1998 at 17.5

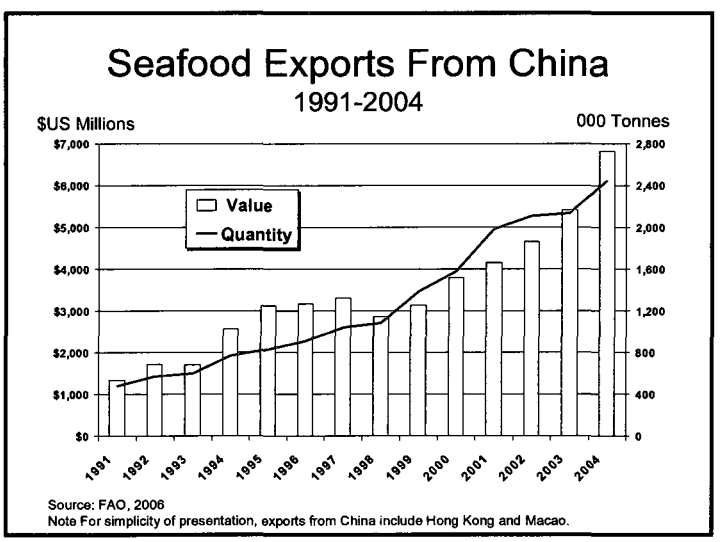

Figure 12

[5] The FAO database does indicate the types of vessels reported for 1970 to 1995. The total number in 1995 listed is 432,674. Statistics for 1998, however, indicates that there are 990,552 vessels consisting of 472,756 decked vessels and 517,796 undecked vessels. It would appear that the 1970 to 1995 data only includes decked vessels, however, this has not been confirmed by the FAO.

[6] Compound annual growth rate is used given the nature of growth from year to year, i.e. incremental increases from year to year. Another measure often used is the annual average growth rate. This a simple average of the percent change and during this period it was 6.7%.

million tonnes. In comparison, total world landings grew at a compound annual rate of 2.3 percent from 1978 to 1988 and by negative one percent from 1988 to 1998.

At the same time, China has increased its aquaculture output substantially. Aquaculture production was 2.5 million tonnes in 1980; however, this has increased to 41.3 million tonnes in 2004 (See Figure 11). The compound annual average growth rate for aquaculture was 10.6 percent from 1978 to 1988, 15.1 percent from 1988 to 1998, and 6.6 percent from 1999 to 2004. In comparison, world aquaculture production grew by 9.7 percent on a compound annual average basis from 1988 to 1998 (FAO, 2006).

China is now the largest single seafood exporter with 2004 shipments of 2.4 million metric tonnes worth US $6.5 billion. As Figure 12 indicates, growth in seafood exports has accelerated since China's accession to the WTO in 2001. Prior to this, imports of fish faced tariffs as high as 35 percent.[7] The reduction in tariffs would have allowed greater access to the Chinese processing sector by suppliers of raw material. Conversely, it would have reduced the price of raw material for Chinese

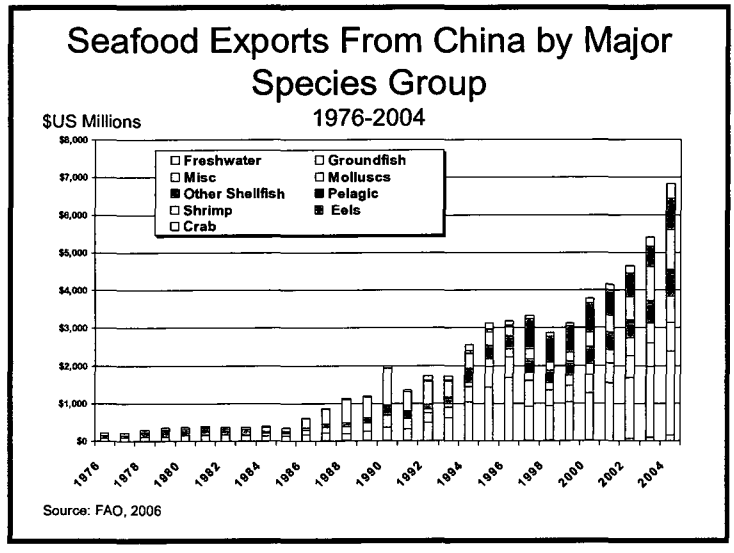

Figure 13

[7] Tariff rates on most seafood were set at a declining rate from the time China joined the WTO on December 11, 2001 to 2005. The rates vary by species. The rate for crab declined from 23.5 to 10 percent. Tariff rates are given in: http://www.wto.org/english/tratop_e/schedules_e/goods_schedules_table_e.htm.

producers sourcing raw material internationally. With a well developed fishery and processing sector, the WTO accession has essentially allowed the productive capacities and competitive advantages evident in the Chinese seafood sector to expand to take advantage of this in the acquisition of internationally sourced raw material.

The expansion of China's seafood exports is clearly evident in key markets. One of Newfoundland and Labrador's key markets has been the United States. Chinese exports to this market have doubled since 1999 from $US 350 million to $US 1.1 billion in 2005 (FAO, 2006). This pace of growth is clearly a reflection of increased investment and shows that China has emerged as a major supplier in Newfoundland and Labrador's traditional markets.

By species group, Figure 13 shows that groundfish is the dominant species group exported from China. Groundfish exports in 2004 were worth $2.2 billion and represented 32 percent of total seafood exports. Shrimp and eel exports are the next largest groups representing 15.2 and 12.6 percent of total seafood export value, respectively.

Figure 14
Groundfish Plant, Qindao, China

In 2004, China imported 3.4 million metric

tonnes of seafood worth $5.1 billion. The largest single volume of product imported was 587,000 tonnes of cod species and 360,000 tonnes of other demersal marine fish[8]. A large portion of this fish is processed and then re-exported (See Figure 14).

There are a large number of processing facilities in China and capacity utilization and throughput has increased substantially. In 2004, there were about 8,475 seafood processing facilities in China. This is up by 458 facilities from 2003 (Glitnir Bank, 2006 a, p. 21). From 1998 to 2004, processing capacity has increased 57 percent and final processed output by 87 percent. The total processing capacity in 2004 was 14.2 million tonnes with actual processing of 10.3 million tonnes. This suggests a capacity utilization rate of about 72 percent. In comparison, processing capacity in 1998 was nine million tonnes with actual output of about 5.5 million tonnes and a capacity utilization rate of 61 percent (Glitnir Bank, 2006a).

While China's productive capacity has been expanding the reverse is true in most other developed nations. In Newfoundland and Labrador, there are now only 3-4 major groundfish processing plants and only three that are automated. In Iceland and Norway, there have been a substantive reduction in the number of plants operating in those countries (DFA 2006b, DFA 2006c). The Newfoundland and Labrador industry has reduced productive capacity in response to moratoria on key fish stocks.

[8] The data referenced is from the FAO Fishery Information, Data and Statistics Unit. 2006. Fisheries commodities production and trade 1976-2004. This dataset does not provide a breakdown specifically for Pollock/saithe, however, a large portion of the Alaskan and Russian Pollock is known to enter China for reprocessing.

Until 2003, the Newfoundland and Labrador industry had been importing frozen-at sea fish for re-processing. This product is in direct competition with Chinese product. The price of raw material has reportedly been bid up by the Chinese from around US$ 2,200 per tonne in 2001 to current levels reportedly exceeding US$4,300 per tonne. This translates into a price to the market of US $1.95 per pound before adjusting for processing yield and processing costs. With its labour cost advantage, local producers cannot compete against China and local processors have been forced to stop sourcing foreign raw material for reprocessing.

China has a very significant labour cost advantage over most seafood processing companies in Canada, Europe and the U.S. It has been reported that operating costs in China can be only a fraction of production costs in Canada. On my recent visit to China, one processor visited indicated that the cost of reprocessing small cod, less than 15-17 inches, labour and packaging included was 25 cents per pound. In comparison, the same labour input in this province is about 70 cents (Tavel, 1993, p. 27) based on hand cut fish and processing data from the pre-moratoria period.

Manufacturing labour costs in China average about $US 0.50 to $US 1.00 per hour. In Shanghai, labour costs average about US$153-US$261 per month and in Dalian, an area known for its seafood processing, monthly wages are $US 64-$US 151 per month or forty to ninety-five cents per hour (Kalish, 2005, p. 19). In comparison, wage rates in

plants in Newfoundland and Labrador are about $10.00 per hour or US$ 8.5 (DFA, 2007a).

Not only are wage rates lower in China, but the government also offers tax incentives for seafood processing (Glinir Bank, 2006a, p. 22). While the amount of these incentives are not known, this combined with low wage rates would provide the Chinese processor with an advantage. Processing has been a growth sector for the Chinese economy. It clearly has become a means to access foreign currency. While explicit policy statements targeting the seafood processing sector were not found in this review, accessing foreign currency from an international competitive sector is a recognized facet of the Chinese industrialization policy (Lu, 2002, p.15-16). The seafood processing sector has met these objectives and this is demonstrated by the rapid growth experienced in seafood exports.

Also important is that state run banking and lax lending policies have also provided the industry with an advantage. Access to capital has been an important component of China's growth. Again, however, the extent and value of these as advantages for the seafood sector are not known[9].

Clearly then, the dilemma faced by international seafood manufacturers is how to compete with China and companies based in China. Pacific Andes is a company based in

[9] The state run banks in China have been active in industrializing the economy. Ding Lu, for example indicates that State Banks provide low interest loans and discriminative lending to different sectors (Lu, p. 20). Wolf et al, indicates that the banking system is used to promote government policies and to channel savings from individuals to borrowers (Wolf el al, p. 126). Furthermore he indicates that government policy often guides banking decisions (p. 126-128) over normal credit risk analysis.

Hong Kong that has capitalized on the efficiencies from Chinese production. Over the past ten years, the company has expanded its operations from one plant in China to approximately 16. Most of its facilities are located in Qingdao and Rushan, China (Pacific Andes, 2006).

Based on their 2006 annual report, the company sells into around 40 countries with its primary markets being China, Japan, the EU, the North America and Russia (Pacific Andes, 2006). Approximately 51.5 percent of its sales are frozen fish and 41.2 percent is represented by processed fish in the form of fillets and portions (Pacific Andes, 2006). The company's largest volume of sales remains the trading of frozen fish products.

In 2006, all of Pacific Andes plants operated at full capacity. Its newest plant in Hongdao, Qindao, China has capacity of 60,000 tonnes of groundfish fillets or portions per year and construction cost of $US60 million (Pacific Andes, 2006). This is a raw material equivalent production capacity of about 170,000 tonnes or 348 million pounds. In comparison, the large fish factories such as FPI's Marystown facility would have access to only a fraction of this raw material. The Chinese advantage extends from labour, to access to capital to low fixed costs per pound. This is a daunting challenge to Newfoundland and Labrador producers.

Pacific Andes has experienced double digit growth rates over the past five years as it expanded its primary production in China. The company is now expanding its secondary

productive capacity and expects even greater success producing breaded and secondary processed products for export markets. Its focus over the next two years will be the production of ready to eat meals in China for export. (Pacific Andes, 2006). This expansion into secondary processing will further challenge the economics of North American seafood processors . Until now, the secondary processing sector has not been a target of the Chinese. Fish can be breaded and battered anywhere. With the three tier cost advantage of Chinese processors, (ie, labour, capital, throughput) processors will have to be aggressive in order to compete.

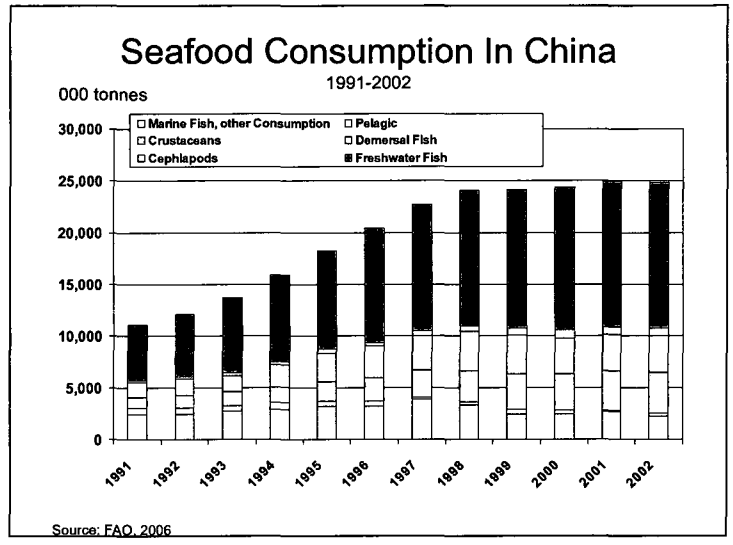

Figure 15

3.2 China as a Market for Seafood

One thing is certain about China: the Big Fish is only going to get bigger. And seafood companies around the world better figure out how to play their China card sooner rather than later (Redmayne, 2004, p. 23).

The Chinese market offers significant opportunities now and over the next number of years. Incomes are expected to increase and this will fuel internal consumer demand for seafood products. With a population of 1.3 billion that is expected to increase to 1.5 billion, there is significant opportunity. Income levels remain low; however, the numbers of people with enough disposable income for seafood consumption is expected to

increase over the next 20 years. This will provide a significant market opportunity for seafood producers.

As illustrated in Figure 15, total seafood consumption in China in 2002 was around 25 million tonnes with about 14 million tonnes of freshwater species and about 4,000 tonnes of shellfish and another 3500 tonnes of demersal species. On a per capita basis, seafood consumption in China in 2005 was about 19 kg per person (Figure 16). In comparison, per capita seafood consumption in the United States in 2004 was 21 kg (47 lbs) and in Japan 66 kg (145.7 lbs) (About, 2007).

If consumption in China equalled that of Japan, an additional 61 million tonnes of seafood would be consumed in China. At that rate, China would consume over 85 percent of current world production of seafood. This of course is unrealistic given the income levels in China but it does illustrate the market potential.

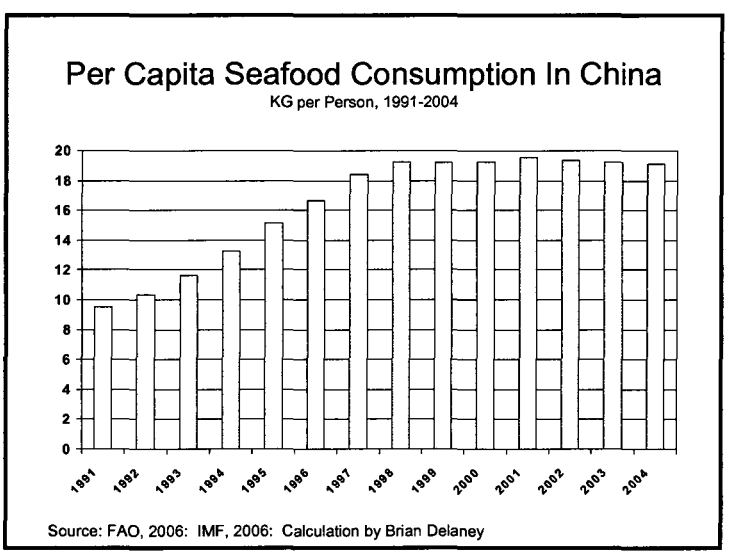

Figure 16

Siang, 2006, (p.30) predicts that food consumption will grow in China by a compound annual rate of 6.7 percent from the 2000 to 2025 period in

urban areas. At the same time Fishman, 2006, (p.51) suggests that 60 percent of the Chinese population will be in urban areas by 2030. Using these growth rates, a substantial increase in seafood consumption is expected. Glitnir Bank (2006a, p.32) cites Chinese seafood consumption increasing to 36 kg per person by 2020: this is almost double the 2005 level. Based on a population of 1.5 billion, this translates into 54 million tonnes of seafood.

China is relatively underdeveloped in terms of its access to food products and this provides an opportunity for those getting in early. Retail expansion has been dramatic in recent years and growth has followed changes in incomes and GDP. Clearly, as China modernizes, there will be significant opportunity for growth. The Chinese market is huge and growing at a rapid rate. Retail sales in 2004 were almost $US 700 billion and have grown a compound annual rate of 12.7 percent from 1994 to 2004 (See Figure 17) (National Bureau Statistics of China, 2005).

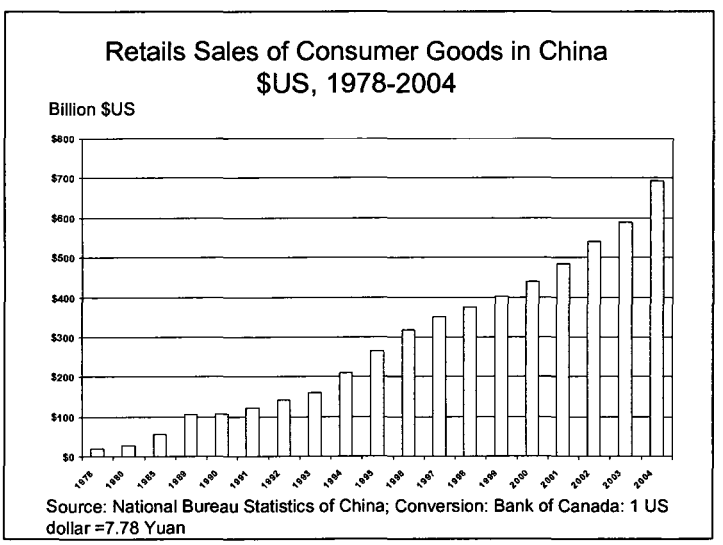

Figure 17

Recognizing the opportunity in China, many companies have set up shop. French retailer Carrefour opened its 44th hyper market in China in Beijing in 2005 (Redmayne, 2004, p. 22-23). On February 7, 2007 it opened its 97th store (Carrefour,

2007). Wal-Mart has expanded significantly going from 37 stores in China in 2004 to 73 stores as of December 2006[10] (Walmart, 2006).

The largest supermarket chain in China is Lianhua Supermarkets. The company has been aggressive with plans to increase the number of stores from 2,500 in 2004 to 8,000 stores by 2008 (Redmayne, 2004, p. 22-23). There were 3,708 stores in 2006. Compound annual growth in gross sales for Linhua from 2001 to 2005 has been 36.4 percent and 29.4 percent in profit (Linhua Supermarket Holdings, 2006).

Similarly, WU-Mart, another Chinese supermarket chain, began operation in 2000 and now has 567 stores. (Wumart, 2006). The company, however, is not currently profitable but continues to expand.

The dramatic growth in retail stores will provide an opportunity for increased consumption of seafood products. Seafood companies not entering the Chinese market could miss a substantial market opportunity.

There are difficulties associated with conducting business in China. Corruption remains an issue in many regions and sectors of the economy and the legal system is not as

[10] As of December 2006, there are 73 units in 36 cities, including Shenzhen, Dongguan, Kunming, Dalian, Shantou, Fuzhou, Shenyang, Xiamen, Harbin, Changchun, Changsha, Beijing, Nanchang, Jinan, Qingdao, Tianjin, Nanjing, Nanning, Guiyang, Jiaxing, Jinan, Jinhua, Jinjiang, Nanchang, Nanjing, Nanning, Guiyang, Wuhan, Taiyuan, Chongqing, Shanghai, Jinjiang, Yuxi, Wuhu, Weifang, Yueyang, Yantai, Jinhua, Jiaxing, Zhangzhou, Chengdu, Wuxi, Ningbo and Quzhou. These employ 36,000 people or an average of 493 people per store. http://www.wal-martchina.com/english/walmart/index.htm

developed as in the United States and Canada (Wolf, Yeh, Zycher, Eberstadt, Lee, 2003, p. 27-35). This can create difficulties in conducting business especially in areas where intellectual property is a concern (Fishman, 2006). For example, the lack of legal effective protection for trademarks, brand names, patents or product recipes, can place a company at substantial risk.

As well, there is not a well developed distribution network or network of cold storage facilities. For frozen seafood the lack of cold storage creates a problem. With a limited availability of reefer trucks, moving frozen product can be a challenge. Canadian shrimp producers, for example, focus their marketing efforts in larger areas where there are cold storage facilities.

Supermarkets often display frozen shrimp in a thawed form for consumers to view and purchase in bulk (Personal Knowledge). This can undermine product quality. As well, bicycle carts are often used to bring product from cold-storage to the end user (See Figure 18).

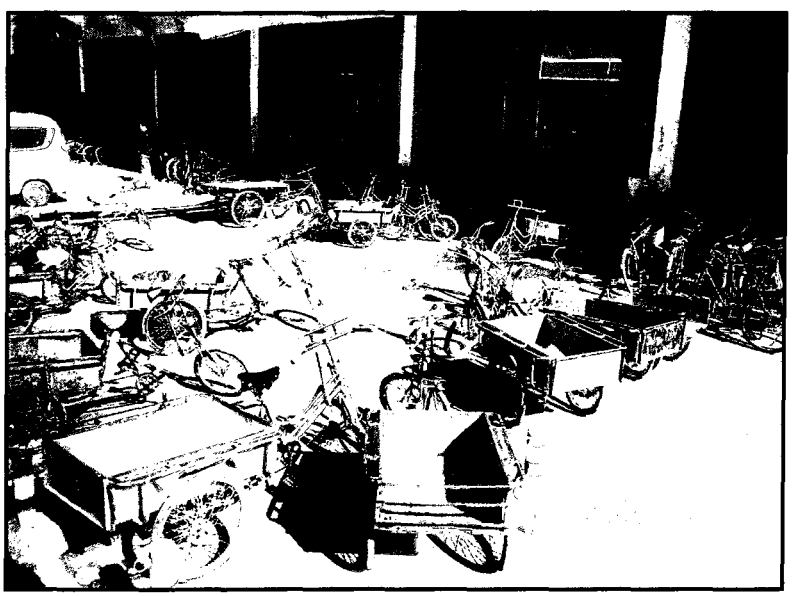

Figure 18
Handcarts at Wholesale Food Market in Beijing. (Often these are used for local distribution of frozen seafood. This ultimately undermines product quality).

This can negatively impact product quality as product can thaw exposed to warm air temperatures.

Companies interested in conducting business in China must be aware of the legal system. For sales of product into China, it is important to clearly understand the final consumer of the product and the distribution system in place to get the product to that consumer.

3.4 Challenges to the Chinese Economy: Is the Growth Sustainable?

The Chinese use two brush strokes to write the word 'crisis.' One brush stroke stands for danger; the other for opportunity. In a crisis, be aware of the danger - but recognize the opportunity. **(Nixon, 2007)**

As noted in Section 2, globalization is a process that can be slowed by political and policy initiatives. The path that China will take over the next number of years will determine whether it will continue on the road to development and whether this development will be sustained. At the same time, China's integration with the international community carries with it a number of risks that are directly related to the historical development of the country. The emergence of a mixed capitalistic and communist system results in a system that is inherently at odds with itself. The communist system focuses on the collective and a planned economy whereas the capitalistic model focuses on the individual and a free market.

Beyond this, China faces some deep internal challenges. Nolan (2004) lists seven main challenges facing China. These include:

- Poverty and inequality;
- Chinese businesses facing global competition;
- A degraded natural environment;
- Declining capabilities of the state;
- International relations;
- Widespread corruption; and
- Dangers engaging with the international financial system. (Nolan, 2004, p.1-2)

Wolf et al. see similar challenges but also believe that the spread of disease such as HIV/Aids and epidemic disease, the potential collapse of the Chinese financial system, and risk associated with energy prices, as significant risks (Wolf et al, 2003, p. 171-175). Using a series of models, he indicates that the total GDP impacts of these risk factors negatively impacts the country's GDP by 7.4 to 10.7 percentage points per year (Wolf et al, 2003, p. 176).

In recent months, there has emerged controversy over the safety of products produced in China from tires to food related products for human and pet consumption. The controversy in relation to food products deals with the use of banned ingredients and has resulted in the United States banning certain seafood products (Huffman, 2007). With a relatively undeveloped legal system and lax enforcement of existing laws, producers working in China could be tainted by the actions of unscrupulous businessmen. As such, caution is warranted if producers chose China as a destination. At the same time, food

safety issues could drive consumers away from Chinese goods to goods manufactured in other areas.

4.0 The Newfoundland and Labrador Fishing Industry

> *It must be determined "...whether the fishing industry should become the preserve of professional fishermen or plant workers, all of whom can earn from it an adequate living; or whether it should continue as at present a social relief mechanism, offering some measure of gainful employment and hence of dignity to a large number of participants most of whom will continue to require income supplementation."* Harris, 1990, p.150

The Newfoundland and Labrador fishing industry is an export based industry with approximately 90 percent of product exported outside Canada (DFA, 2007b). In relative terms, the industry is small representing 0.1 percent of total world fish production (FAO, 2006). The industry is directly impacted by global forces. Companies have to compete head-to-head with other fishing companies from nations around the world. China has set the standard in reprocessing of frozen seafood and it is difficult for processors to compete in the same product markets.

Nationally and internationally, the largest buyers of seafood products have consolidated thereby reducing the impact that a single company in this province can have in the market place. There has been some consolidation in the Atlantic region amongst primary producers. The Barry Group, The Quinlan Group, Daley Brothers and Ocean Choice International all have expanded beyond their Newfoundland and Labrador operations through acquisitions in Atlantic Canada (Personal Knowledge).

If producers in Newfoundland and Labrador wish to compete in international markets they have to be price competitive, the product must have consistently good quality and

there must be a consistent and stable supply. In order to be price competitive producers in this province must have similar costs as producers in other regions. If labour costs are too high then the other factors of production must compensate for the higher costs. Cost factors in the fishery can be categorized into four main categories: the cost of raw material; labour; capital; and, transfer costs such as shipping the product to market.

A higher cost in any of these has to be compensated for by lower costs in other areas, given a certain market price. For example, high labour rates or low capital utilization requires that raw material prices must be lower relative to competitors or market transport costs must be lower. Otherwise the product has to be differentiated and command a higher price than other competitors. Producers would have to have a market advantage and receive a greater return from the marketplace in order to pay the same price to harvesters in a higher cost environment.

In relation to China, Newfoundland and Labrador is at a substantial disadvantage in many of these four cost areas. These include labour rates, capacity utilization, and access to capital. The Chinese industry, however, is disadvantaged by its distance from some raw material sources, the distance to market and the products produced are usually twice frozen. While the costs of these disadvantages have not been quantified, the competitive position of China in the world seafood sector suggests that their cost advantages greatly exceed these negative features.

In Newfoundland and Labrador, the industry is plagued by low capital utilization rates, labour costs are higher than most regions in Canada and shipping costs can be higher given the location of the province. Labour rates in 2001 in this province were $10.58 per hour compared with between $7.74 and $9.43 for Quebec and the other Atlantic provinces (Beaudin, 2001, p. 161). Rates are not believed to have changed considerably since 2001; however, a consistent data set is not readily available to confirm.

Selling into the US market, local producers may have a transportation advantage relative to Norway or Iceland, or even China; however, it is at a relative disadvantage relative to other Atlantic producers. Transportation costs are generally higher because of longer distances to market and for fresh product, it takes an extra day to get product off the island resulting in lower product shelf life.

Capacity utilization rates are low in the harvesting and processing sectors in the Newfoundland and Labrador inshore sector. The offshore sector, with vertical integration is known to have a competitive capacity utilization rate given their flexibility in choosing their operational platform. There are exceptions; however, for the most part anecdotal evidence suggests that most of the offshore trawlers run at near capacity. The exception would probably be those involved in groundfish. In comparison, the inshore sector has very low usage rates in all aspects of the business because of its very high seasonality and the large number of participants.

Anecdotally, the price paid to fishers in this province is often lower than that found in other regions. Data are unreliable in this regard and it is impossible to get a true understanding of the pricing dynamics in this region. In Newfoundland and Labrador, minimum prices are negotiated with an informal auction occurring for some species once the season starts. The payments to harvesters can take a number of different forms including cash, in-kind goods and services or financial services (Vardy, 1998). Only through an audited review of harvesters' and processors' books in all regions can the true price be calculated. The industry has not been receptive to such a review in the past.

4.1 The Regulatory Environment.

The regulatory structure of the Newfoundland and Labrador industry contributes in large part to the many structural inefficiencies found in the sector. The jurisdictional split of responsibility and the strong socio-economic objectives of both levels of government often contribute to an economically inefficient system.

Regulation of the fishing industry in Newfoundland and Labrador is governed by both the Federal and Provincial Governments. The Federal government has constitutional jurisdiction for the management of sea and inland fisheries and is responsible for trade matters through Section 91 of the Constitution of Canada. The Provincial government has responsibility for property rights under Section 94. As such, the harvesting sector and fishery management decisions are regulated by the Federal government as well as the

regulation of the export of fish products. The Provincial government is responsible for the licensing of fish plants.

The harvesting sector in Canada is guided by literally thousands of pages of Acts and regulations (See Appendix I). These regulations cover all aspects of the marine environment from issues such as pollution, fish catches, harvesting methods and the choice of fishing platform. It is well beyond this report to comment on all of DFO's regulations. There are certain rules, however, that have a profound effect on the industry.

Two of the more restrictive regulations are the vessel replacement policy and the fleet separation policy. Up until March of 2007, vessels in the less than 65 foot fleet had cubic number and vessel length restrictions. The result of these regulations is an inefficient and generally unsafe fleet. Many vessels sixty-five feet in length fish in waters alongside large two hundred foot offshore factory freezer vessels, 250 miles from shore. In general, industry players often suggest that this vessel length restriction has created vessels that have poor sea-keeping ability and are very fuel inefficient. The recent increases in fuel costs have exacerbated the cost of catching and landing fish.

DFO's fleet separation policy requires that license holders must be vessel owners. As such, processing companies are not allowed to own licenses and fish quotas. This restriction limits the ability of processors to control their raw material supply. Outside of the shrimp fishery, there is little coordination of landings. This lack of coordination

results in extra costs being imposed on the industry in the form of extra trucking, lower quality and excess capital in all sectors. This reduces the return that is gained from the industry thereby challenging the ability of the industry to compete globally.

As outlined in Appendix I, the Provincial Government regulates processing activities through a somewhat less voluminous series of Acts and regulations. The Fish Inspection Act and its associated regulations provide the general rules and regulations associated with processing of fish products. This Act provides the Minister with authority to issue conditions of license and it is often through this medium that government policy initiatives such as minimum processing requirements are established.

Minimum processing requirements are essentially minimum authorized treatments for fish products. For cod for example, the fish has to be processed in a fillet form. For snow crab the minimum treatment is cooked sections or whole cooked. These minimum treatments are the basis for a limited entry license system. Harvesters indicate that these restrictions tend to result in a lower price for their raw material (Personal Knowledge). While fishers may receive a lower price, it is likely the many other structural issues have the greatest influence on product prices.

The Fishing Industry Collective Bargaining Act provides for harvesters and processors to collectively settle fish prices. This legislation effectively allows harvesters and processors to collude to set fish prices. Unique in the developed world, this legislation results in no

true connection between the market and raw material prices. This influences product quality, the timing of landings and the gear types used by harvesters. As such, it contributes largely to the inefficiencies found in the system and compromises the ability of the industry to compete with countries like China or even Iceland.

4.2 Seasonality and Capacity Issues.

The industry is now far more seasonal than it has ever been in the past thirty years. Illustrating this, peak landings in 2002 were 9.5 times the landings in January compared with only three times the January level in 1987. (Dunne, 2003, p.6) At the same time, the industry is primarily based on vessels less than 65 feet in length that can only fish in periods of fair weather (Dunne, 2003, p. 6-7 and Vardy, 2002, p. 14).

The degree of seasonality that is found in the industry is related to the structure of the harvesting fleet. Also the Federal government sets opening and closing dates for various fisheries that also contributes to this seasonality. For example, snow crab can only be

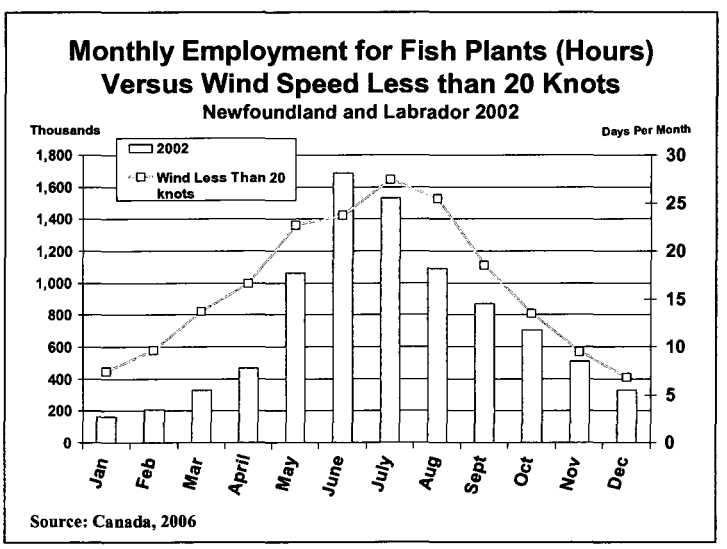

Figure 19

harvested between April and July and capelin harvests only occur during the two-three week spawning season.

Further illustrating the seasonality of the industry and its relative impact is monthly employment in fish plants. Figure 19 shows that there is a direct correlation between the number of days that wind speed is less than 20 knots and the amount of employment in fish plants. Most vessels less than 65' feet generally are unable to fish safely when wind speed exceeds 20 knots (Vardy 2002, p. 14). As a result, there is a concentration of landings and hence, in onshore employment.

In April of this year, the Federal government announced a relaxation of the vessel replacement policy. The new policy allows operators the flexibility to expand up to 89'11" (DFA, 2007c). The policy will take a number of years and substantial capital for the industry to expand. In the meantime, the industry will be constrained by the current fleet.

This structure and resulting seasonality has implications for the future of the industry. It results in landings occurring in concentrated periods of time. Most vessels are only capable of working within the spring and summer weather window. This means that fish is landed when the air and water temperatures are at their warmest. The result is a lower quality product. For shrimp, this means that product is landed when the processing yield is lowest and this translates into a substantive cost to the industry (Vardy, 2002). For

groundfish, this means a lower quality product and further compromises the industry's ability to compete in a global marketplace.

As well, the large volumes landed in short time periods require large amounts of working capital. As such, there are anecdotal reports that processors often sell product to generate cash flow rather than timing shipments to actual market demand. Buyers are aware of this behaviour and often use this to their advantage when purchasing from local producers. This results in a lower return from the marketplace further limiting the industries ability to compete globally. It also means that a portion of the economic rents that would normally accrue to the industry goes to outside buyers. As with the other structural inefficiencies, this would reduce the ability of the industry to compete globally.

Furthermore, the introduction of Individual Quotas (IQ) appears to have resulted in a transfer of market power to harvesters that results in processing plants having little influence over raw material supply including timing of landings and product quality (Dunne, 2003). This transference of market power is a natural response to the development of property rights.

In a competitive fishery, harvesters would fish, land their catch and then return to sea as fast as possible to get the next load. In the days of groundfish, this often resulted in gluts that resulted in lower prices. In an IQ fishery, harvesters know the amount of fish available and can plan their trips to minimize costs and maximize value. As well, the

known quantity of fish can be shopped around to the highest bidder. That being said, the benefits of IQs have been diminished in recent years, especially in the crab fishery. Changes in regulations such as opening and closing dates, the pricing formula and soft-shell protocols has resulted in the fishery taking on the features of a competitive fishery with the race to catch fish (Cashin, 2005).

Also part of this debate is the demand from some processing companies to be permitted to ship unprocessed fish overseas to China for reprocessing. A large volume of snow crab is shipped each year and FPI and other companies have been requesting approval to ship unprocessed product. This is occurring at a time when processing workers are finding it difficult to qualify for EI benefits. Processing in China is attractive; as previously discussed wage rates in China are a fraction of the production costs in this province. While processors may be able to make a profit processing in this province, they can likely make a greater profit processing in China.

4.3 Overview of the Harvesting Sector

The harvesting sector in the province has changed dramatically since the moratoria on major groundfish species. The

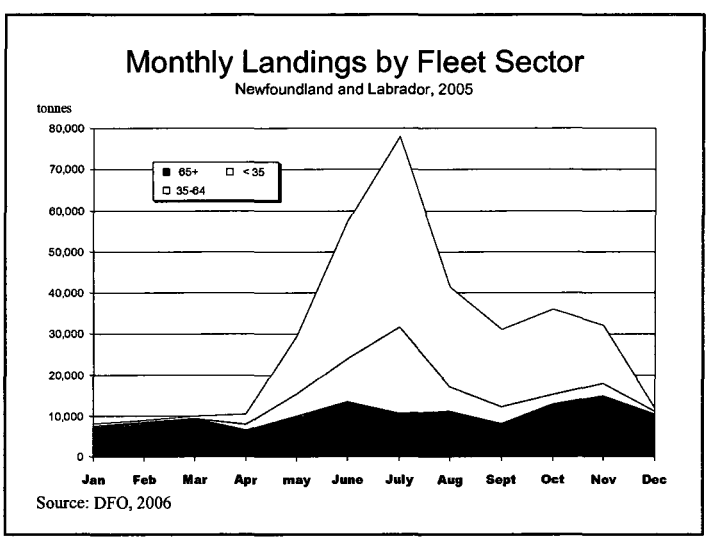

Figure 20

industry is now a predominantly an inshore fishery utilizing vessels less than 65' in length. The problems in the harvesting sector relate to the current structure and related overcapacity, price setting, landed quality, seasonality, safety and the presence of non-market factors that influence behaviour such the EI system.

Figure 20 depicts monthly landings by fleet sector for 2005. Landings for the greater that 65' fleet range between 7,000 tonnes and 14,000 per month. In comparison, landings for the <35' fleet range from 64 to 21,000 tonnes per month and the 35-64 fleet have monthly landings of ranging between 418 and 46,000 tonnes (DFO, 2006).

The broad range in landings illustrates the dramatic differences between fleet sectors. These differences can have a substantial impact on processors' collection costs, and production costs. Furthermore with large peaks in landings, plant capacity has to be built to be able to handle the period of highest volume. This extra capacity is only used for 3-4 weeks per year and is an inefficient use of capital. Competitors often run their operations year round or for longer periods of time and therefore have a more efficient use of capital. The provincial industry with its capacity idle for most of the year is intuitively at a cost disadvantage.

In 2004, there were 6,138 enterprises fishing in vessels less than 65'. This was composed of 4,472 core enterprises and 1,666 non-core. Among other criteria, the core designation was given to harvesters whose annual earned income was comprised of 75 percent fishing

income (Personal Conversation, Bren Condon, Former Director, Professional Fish Harvesters Certification Board).

In 2003, there were 13,410 taxfilers that reported self-employed fishing income. This compares with 1990 when there were 14,750 harvesters with self employed fishing income (Statistics Canada, 2004). While there has been a substantial reduction in the amount of raw material landed over this period, the number of participants has not declined substantially.

The expansion of Employment Insurance (EI) benefits has helped maintain more individuals in the fishery than would otherwise participate. In 1996, the EI system was changed to allow gross revenue earned on-board a vessel to be used to calculate benefits. Earnings to qualify for EI benefits are now based on gross earnings of about $3,500. Maximum EI is available on sales of around $13,500. In 2000 as a result in a change in policy by HRDC, harvesters are able to open two claims per year. The result of this is illustrated in Figure 21. Benefits paid in 1999 totalled $93.4 million. This compares with

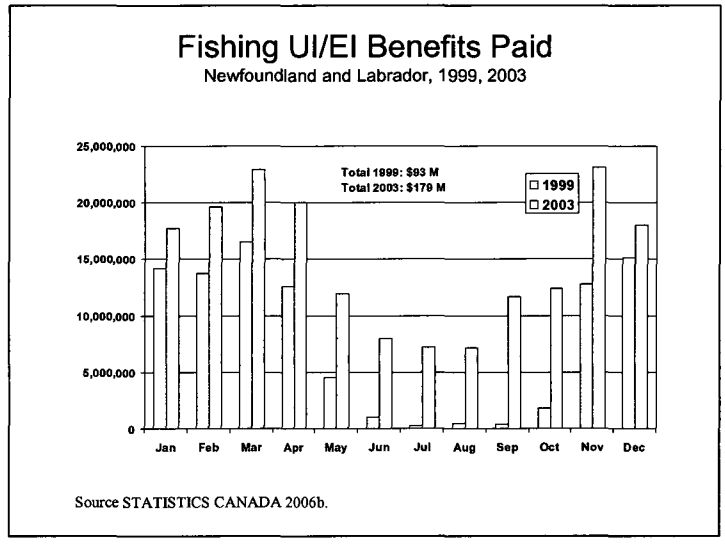

Figure 21

2003 benefits paid of $179.7 million. Benefits have since declined to approximately $136 million in 2005. (Statistics Canada, 2006b).

The easy access to EI benefits is effectively a subsidy to the industry and is not economically efficient. In 2003, the latest year taxfiler information is available, total net fishing income was $173 million whereas EI benefits for people with self-employed fishing income was $203 million (Statistics Canada, 2004). Intuitively, EI likely results in a greater investment in the industry than would otherwise occur and attracts more labour than otherwise might be available. It can also contribute to over-fishing. The excess number of participants translates to increased seasonality and this is clearly shown in the landings patterns that occur in the province.

4.3.1 Harvesting Capacity

There have been a number of license retirements in the harvesting sector since the 1990s. Despite this the industry remains in an overcapacity situation. Low capacity utilization means excess capital and too many participants and can be economically inefficient.

Table 4.1
Average Days at Sea for Fishing Vessels by Boat Size

Primary Activity	35-44'	45-54'	55-64'	35-64'
Crab and Shrimp	51	56	64	61
Crab	24	32	34	26
Shrimp Vessels	51	48	49	
All Vessels	26	40	53	37

Source: Canada, 2006. p. 46.

Excess harvesting capacity is clearly illustrated by the number of days fishers spend at sea. In 2004, fishermen spent on average 37 days at sea. For larger vessels fishing crab and shrimp, the average days at sea were 64 days or 17 percent of the year. Assuming that the vessels can only operate between April and October, this is still only a 34 percent utilization rate. These vessels tend to cost $1.0-$2 million. The low utilization rate is not efficient. Other vessels such as crab vessels 35-44' only spend 24 days at sea or 6.5 percent of the year or 13 percent of the April to October period. Based on these data, it would suggest that the harvesting fleet could be reduced by 50-60 percent and still be able to harvest the available fish.

Harris clearly states the implications that overcapitalization can have on the industry.

> *"Overcapitalization in the harvesting sector tends not only to increase pressure upon the stocks but to conceal the true level of fishing mortality by encouraging an underestimation of effort involved in the landing of a given quantity of fish and thereby suggesting interpretations of abundance that would justify higher TAC's as opposed to a policy of conservation."* (Harris, 1990, p.42)

4.4 Overview of the Processing Sector

Consistent with the overcapacity in the harvesting sector is an excess of capacity in the processing sector. It is through the processing sector that the fish products harvested reach the marketplace. Marketing efforts are uncoordinated and for the most part, the competitive environment at the wharf translates into strong competition in the market place. As a result, anecdotal reports suggest that some of the strongest competition faced

by local processors is not from the international community but from other provincial processors. This results in a lower return from the market place than might otherwise occur and could compromise the ability of local processors to compete with other suppliers.

This processing sector is directly affected by the offshore and inshore policy split evident in the Newfoundland and Labrador industry. This policy, often referred to as the fleet separation policy, prevents the ownership of inshore harvesting licenses by processors. Of the 115 active processing licences, only about three operators have regular access to fish landed by offshore licenses, where vertical integration is allowed. The other plants operating in the province acquire their fish from the inshore sector. This results in a highly seasonal processing sector and low incomes for associated workers.

The capacity in the processing sector mirrors that of the harvesting sector. Plants typically work from April to October. Outside of this period, landings by the inshore sector are low and of insufficient volume to warrant plants remaining open. Capacity utilization therefore is at best around fifty percent. If you take the peak volumes as a proxy for capacity then the industry is working at far less than fifty percent (Personal Knowledge).

Another difficulty faced by the processing sector is its inability to control the amount of raw material landed at a given time. Creative solutions have been devised. The

processing sector has become the bankers of the harvesting sector. Working capital and capital loans are provided in exchange for an assignment of catch. It is estimated that the processing sector financed just about all of the $200 million expansion of the harvesting and processing sectors that occurred from 1996 to 2001 (Vardy, 2002). This included the retooling of about 380 vessels to prosecute the shrimp fishery and the building of large capital intensive shrimp processing plants.

Processors have also attempted to gain a control of their raw material supply through policy changes. In 2005, government implemented a raw material sharing system for snow crab that would have resulted in processing plants receiving a specified share of the snow crab landed. Harvesters were vehemently opposed to the model seeing this as an intrusion into their property rights and expected that the model would result in lower prices. A review by Richard Cashin resulted in an end to the pilot project.

Without any direct ownership of raw material due to DFO's fleet separation policy, processors do not have the ability to properly plan their businesses and production. In a competitive international market, processors need to utilize their capital in the most efficient means possible. The lack of raw material ownership severely limits the ability of processors to properly plan production and is inefficient. The extent of the inefficiency and the resulting financial impact has not been quantified. Landings patterns over the past five years demonstrate periods of gluts and shortages that must surely challenge operators.

There is little cooperation between harvesters and processors. Outside the shrimp fishery, vessels are rarely scheduled and most landings occur at sites other than processing plants. This results in high levels of trucking and ultimately a degradation of product quality. Furthermore, with uncoordinated landings, often raw material will sit in store rooms well beyond the optimal times resulting in a loss of value to all parties. This places a burden on processors and impacts their ability to compete with efficient processors in other areas. Processors placing too much pressure on harvesters to change behaviour often find they lose their raw material to another processor. As such, there is little ability of processors to influence quality and industry operations to extract a greater return. This further compromises the industry's ability to compete internationally.

4.5 Collective Bargaining

Prices for the main species caught by the inshore sector are not set through the normal supply and demand relationships found in other fisheries but are established through collective bargaining. A new price setting panel was established in 2006; however, collective bargaining for fish prices has been around since the Fishing Industry Collective Bargaining Act was established in 1971 (Vardy, 1998). There have been many criticisms of this sort of model by all parties involved and Newfoundland and Labrador is the only fishery region that sets prices primarily through a collective bargaining framework. This sort of system tends to results in one price for all fishers with no incentives provided for quality.

Poor quality fish reduces the return from the market place making local producers less competitive. In this increasingly global environment, the quality issues in our industry pose some of the greatest challenges for the industry to become competitive. The employer/labour relations pricing model used in this province does not provide any direct connection of harvesters to the market place. Pricing formulas are often based on price to market; however, this does not take into consideration the true return from the marketplace.

There is no connection from the processor to the harvester for the return for high quality product versus product of a lower quality. John Sackton, an analyst hired by the industry to review crab prices, indicates the price differential for Newfoundland versus Alaska crab is about 20 percent lower (Sackton, 2006). The crab produced in this province is a healthy product; however, the conduct of the industry from the water to the market results in a lower price.

The collective bargaining model does not differentiate intrinsic product quality or quality in general. Cod prices, for example, are often about one half the prices paid in other industrialized nations. Similarly, prices for crab tend to be below the prices paid in other jurisdictions. The true price paid to fishers, however, is not known. Collective bargaining establishes a minimum price and the actual level of premium payments and other in-kind services are not publicly available.

The situation in the industry with respect to price setting is clearly outlined in the quote from Richard Cashin.

> *The overall industry should be able to negotiate and enforce prices based on quality if we are ever to be more than a commodity producer forever at the mercy of a more efficient global seafood industry* (Cashin, 2005, p. 54).

An auction system has been recommended to help alleviate some of the problems associated with collective bargaining. The 1998 review of collective bargaining was led by David Vardy, a former Deputy Minister of Fisheries and Aquaculture (Vardy, 1998). The report contained two main recommendations; the establishment of an auction pilot project and the establishment of a pilot project for a new collective bargaining regime.

The auction was recommended as a means to set prices and as a means to improve product quality. There was a general concern that the system of the day did not reward for quality. The report stated:

> *The key feature of an auction system is that it will achieve the highest possible price for the commodity by allowing for the full interplay of market forces. The maximum value is achieved as a result of forces which bring supply and demand for the particular commodity into balance. The resulting price is a function of the amount of competition among buyers, the size of the lot being sold, and its quality.* (Vardy, 1998, p. 83).

The report had intended that the auction was to be implemented at the same time as the new collective bargaining model. It was expected that the auction would result in a lower reliance on collective bargaining (personal knowledge). Unfortunately, the same people

that would work to set up an auction were also the same group that would establish the new collective bargaining model. With limited resources, the auction did not proceed in 1998 but had been scheduled to start in 1999. With the success of the new bargaining model, that is, prices were set for each fishery and fisheries began on time, neither government nor industry pursued the auction further (Personal knowledge).

Some work has begun in recent years and in March of this year the provincial government announced it would provide up to $500,000 per year for three years to operate an auction on a pilot project basis. Some of the industry players are working towards the establishment of the auction; however, some of the processing sector appear to be opposed. With a relatively small number of buyers in the province, it is important for the entire industry to participate in order for the auction to work (DFA 2007c).

5.0 Industry Response to Globalization

For the most part, the fishing industry in developed countries has responded to globalization through consolidation, by establishing joint ventures or opening processing facilities in China, and by producing products for markets where China cannot easily compete. The integrated structure of the fishing industry in countries such as Iceland has allowed them to adjust to global challenges. Companies in Iceland have responded by consolidating internally and by partnering or opening production facilities in China. As well, they are producing in markets where the Chinese find it difficult to compete. The structure of the industry in Iceland has been conducive to change. (DFA, 2006b). The economic efficiencies associated with vertical integration are evident in the fishing industry and this appears to have helped them weather the China storm.

Many companies in Iceland have partnered with Chinese processors to produce whitefish products (DFA, 2006b). This has negatively impacted employment in their home country; however, there are demographic challenges faced by most developed nations that moving production offshore may have helped alleviate.

As noted, China has a substantial cost advantage with its low labour rates. Furthermore, it has targeted specific areas for development. The rapid growth in the fishing industry in that nation has allowed it to become a world leader in fish processing. Anecdotal reports suggest that ten years ago, the poor quality of the seafood out of China resulted in a low

price. This is no longer the case. The only major difference in China's products is that they are twice frozen. For many consumers this is not an issue and this is evidenced by the dramatic increase in fish sales by China in recent years.

The effect of China, and globalization in general, on the fishing industry cannot be under estimated. It has forced companies throughout the world to rethink their production, their markets, and how they work with their clients. While it is difficult to compete with the Chinese in input and final product markets, companies also look at where the best return can be realized from their raw material. This implies an opportunity cost of processing in a higher cost region even when a profit can be made. Companies may be profitable processing at home but a greater return can be realized processing in China. In other cases, the high labour costs in Canada means that some products cannot be produced in this province.

The challenges in the food sector and specifically in the seafood sector have been exacerbated by the increasing size of many customers as the process of globalization continues. Wal-Mart, Costco, Marks and Spencer, and Loblaws have substantial market presence in the retail sector and exert considerable influence over their suppliers. As will be shown, in the food service sector, Sysco and US Food Service have dramatically increased their market size in recent years. This challenges their suppliers to keep up, while at the same time a large contract from one of these companies can make or break a company. This requires that suppliers also get bigger.

5.1 The Big Get Bigger

Globalization has brought about an increase in the size of the largest global companies. This trend is evident in all aspects of the world economy including the food sector. Merger activity in the seafood sector, however, does not appear to have occurred to the same extent as the food sector in general. This potentially places seafood companies at a disadvantage. Companies selling in this market must have the size necessary to be able to supply the large retail and food companies that have emerged. Seafood companies must be of sufficient size to be able to resist the market pressure exerted by these companies. Furthermore, it is necessary for the fishing industries worldwide to have the necessary economic efficiencies so that they can compete.

In Canada, the top five companies represent 85 percent of the retail food market and in the United States, ten grocery store companies represent 81 percent of that market. As size increases, companies have been asking for listing and promotional incentives (High Liner Foods Inc., 2006, p.18). This reduces supplier margins. As such, suppliers must get bigger in order to combat the increased pressure for reduced revenue on product sales or cut production costs. This strategy is evident in many seafood companies.

Analysts indicate that the high past levels of merger and acquisition activity, however, will limit the ability of some food companies to continue to grow due to competition law and market power restrictions. Merger and acquisition therefore, will be limited to small

acquisitions (EIU, 2005, p. 13). Organic growth and brand development are expected to be important to companies in the future (EIU, 2005, p. 1). While this is true in relation to large international food companies like Nestle or Nippon Suisan, there would appear to be room for merger and acquisition growth in the seafood sector.

The largest seafood company in the United States is Pacific Seafood Group with annual sales in 2005 of $874 million followed by Red Chamber Co. ($828 M) and Trident Seafoods Corporation ($800 M). This is far less than the $81 billion in annual sales of Nestle, the $33 billion in sales of Sysco or $18.5 billion in sales of US Food Service (Glitnir Bank, 2006b, p. 18-19).

Sysco in the United States is an interesting example of a large food service company that has grown over the past seven years. It is appreciably the largest food service company in the United Sates servicing the restaurant, lodging, hospital and education sectors throughout North America. It purchases seafood from Canada and specifically from Newfoundland and Labrador. The company has seen considerable growth in recent years. Gross sales have increased from $US 19.3 billion in 2000 to $32.6 billion in 2006 (Sysco, 2006).

Much of Sysco's growth has been due to acquisition and internal expansion. In 2006 alone the company acquired 5 produce companies, 2 meat packers and a distributor (Sysco, 2006, p 3). Since 2000, the company has incorporated over 39 businesses into

their operations (Sysco, Annual Reports 2000-2006). These range from broadline distributors to small scale operations with acquisitions costs between $19 and $750 million. While the majority of these operations were in the United States, major expansions occurred in the Canadian and Asian markets.

In Canada, the largest seafood company is Connors Brothers Income Fund/Bumblebee with 2005 sales of $881 M. This is followed by FPI with 2005 annual sales of $834 million and Clearwater with annual sales of $315 million. Connors Brothers is an income trust that is a merger of Bumble Bee and Connors Brothers resulting in the largest canner of seafood in North America (Glitter, 2006c).

FPI has indicated that it must grow in order to compete with other seafood companies and be larger to compete with the foodservice and retailers that have merged in recent years. The company is currently in the process of selling its assets. Potential suitors include Ocean Choice International Inc. and High Liner Foods. While the companies acquiring the FPI assets will grow in size, Atlantic Canada will no longer have a large integrated seafood company. FPI itself acquired the Cloustons Group in the early 1990s and the Seafood Company in 2005 and had been expanding through acquisition.

High Liner is a seafood company that has changed its focus and become a supplier of food products. Seafood remains their main product line. They have attempted to grow through acquisition in the past through the purchase of a pasta company. This, however,

challenged the company operationally and appears to have stalled corporate growth. Their potential acquisition of a portion of FPI could be a positive development for the company.

In the EU, there has been merger and acquisition activity. Young's Blue Crest for example, began a process of consolidation in 1999 with the merger of Young's and Blue Crest Seafoods. Since then the company has acquired other seafood companies in 2002, 2003 and 2004 (Young's Blue Crest, 2007).

5.3 Newfoundland and Labrador's Response to China.

As noted, processors in this province have been facing stiff competition from China in both input and final product markets. This, combined with exchange rate pressures, has placed local producers at a substantial competitive disadvantage. In response, processors have been selling raw material into China such that it is now the second most important market (Statistics Canada, 2006). Some of this product is for consumption and some for reprocessing.

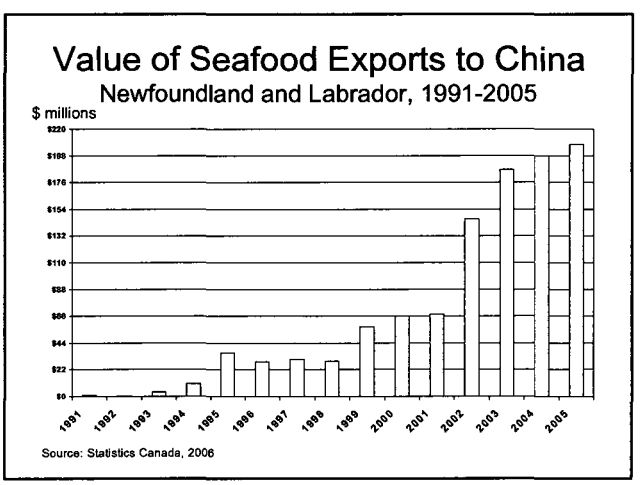

Figure 22

The industry in Newfoundland and Labrador, however, is not open in its relationships with China. Minimum processing requirements in provincial regulations and a public concern about product jobs being exported, have made the industry cautious about discussing publicly activity in China. That being said, some processors have indicated informally that they have interests in China. This is further supported by the large volumes, and high value of exports to that country.

Since 1998, China has grown in importance and has displaced Japan as the next biggest market for Newfoundland and Labrador seafood products. The growth in exports to China has been astounding. In 1991 exports to China were only $1 million. By 2005, this has increased to over $200 million and included crab- $79 million, shrimp $51.6 million, turbot $22 million, mackerel, $22.7 million, redfish $9.5 million and capelin worth $10.1 million (Statistics Canada, 2006).

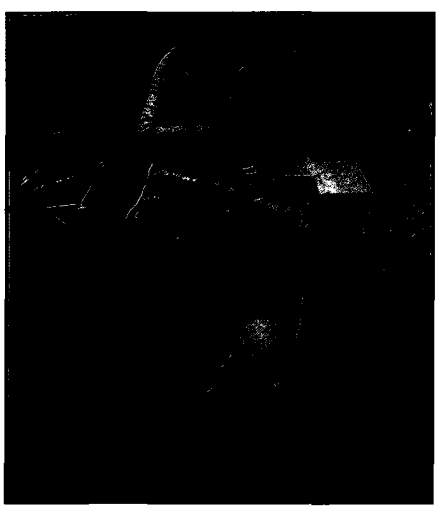

Figure 23
Snow crab leg and claw meat pack on display at Seafood Show in Qingdao, China. October, 2006.

Crab products are shipped to China for hand-picking of crab meat. Low labour rates have virtually eliminated meat production in Newfoundland and Labrador. Japanese companies at one time purchased snow crab for meat picking in China, but would tranship the product. The trend in recent years is for direct purchases and direct shipments to China. As well, some local processors have been contracting meat

production in China (Personal Knowledge). Industry people indicate that the hand-picked meat has a superior flavour and higher yield than the mechanically processed product produced in Canada (See Figure 23).

Most of the shrimp supplied to China comes from the offshore sector. The dramatic increase in exports to China from 2001 to 2002 was a result of a 400 percent increase in shipments of coldwater shrimp to China. Industry officials indicate that turbot and some of the pelagic species are shipped frozen in gutted form for consumption in China.

6.0 Conclusions

... China's competitors must find their own solutions. Some will involve puzzling through how to strike profitable partnerships with China. Others will depend on raising our skills so high that we forge unchallengeable advantages (Fishman, 2006, p. 314).

Globalization is an international process that extends well beyond the borders of Newfoundland and Labrador. Our inward looking focus tends to mask the effects and the changes that are occurring in the international community. The structure of our industry is unresponsive and the participants tend to be uncooperative.

Perceptions are such that international problems become problems created by local politicians or local processors. Often there are there are news stories in the media regarding the fishery that portray the industry as a significant global player. The talk shows, including the Fisheries Broadcast, abound with callers referencing low fish prices and excess processor control over prices. A decline in the market price for a product is often seen as slight against harvesters rather than a perfectly competitive market responding to changes in supply and demand for a given product. There appears to be a lack of understanding of Newfoundland and Labrador's place in the global fishing industry. Moreover, there is a general attitude of mistrust by harvesters of the processing sector.

Globalization is a process that is not likely to be slowed or reversed by the Newfoundland and Labrador industry. It is a process that grew without our direct influence and will continue without our approval. The decision that must be made by the Newfoundland and

Labrador industry is to acknowledge the realities that globalization brings and find solutions and respond to these challenges or refuse to take action to deal with the changes that are occurring and very likely lose the battle. An inward, circumspective view of the industry will likely mean lower prices for raw material and the continuation of the decline we have seen in some sectors of the fishery.

The structure of the industry in this province is troubling. Many of the issues discussed in industry studies demonstrate that people know the solutions but are unwilling or unable to take the necessary actions to resolve them. Lower than optimal quality product has been an issue for over one hundred years. Furthermore, it is unlikely that the problems of seasonality can be addressed overnight. Fewer participants would improve this seasonality and reduce gluts that occur throughout the seasons. As well, a joint effort by harvesters and processors to resolve scheduling issues would greatly benefit the industry. The vast differences between the parties and the high levels of mistrust make this difficult. Without achieving the benefits that could result in this area, it will be increasingly difficult to compete in markets where China has a significant presence.

The current low level of vessel utilization is highly inefficient and suggests that the fleet could easily be reduced be one half to catch the resources available. The capital associated with this excess capacity has to be financed, paid for and replaced. This payment for excess capital reduces the overall returns to the industry than might

otherwise occur. This implied lower return to labour and capital appears to be partially offset by the large EI payments that are transferred to the sector each year.

Changes in Federal policy announced in April, 2007 will in the short term have a positive effect on the industry; however, the long term effects on the processing sector are questionable. The new policy retains fleet separation and as such processors will remain without secure access to raw material. This will continue to keep the focus of processors on acquiring raw material rather than on product development and maximizing overall product value. Furthermore, increased quotas on a single vessel will strengthen an individual harvester's market power, potentially at the expense of the processor.

In the long term, this potential increase in the market power of harvesters could be the demise of the processing sector. It will likely contribute to an erosion of the ability of processors to acquire raw material and could accentuate a continued downward spiral of lower industry returns. This would increase the calls by harvesters to allow the export of unprocessed fish. The returns to the harvesting sector would increase but as a province and industry as whole there would likely be a net economic loss.

That being said, there is a clear recognition in other sectors of the world economy that some of the changes required necessitate a radical change in thought process in the industry. Fishman, for example, recommends revamping the entire United States education system as a means to improve the US competitive advantage (Fishman, 2006,

p. 277). While this is not a key solution to our problems, it suggests that a rethinking of the underlying structures is a necessity.

For Newfoundland and Labrador, improvements in the industry's competitive position requires a number of substantive changes. Harvesters must be paid a price that recognizes quality. Poor quality product must receive a lower price. At the same time premium products demand a higher price. Harvesters must accept that all fish are not of equal quality nor are all harvesters of equal ability. A fisherman that lands good quality fish should receive a higher price than fisherman landing poor quality fish. The same can be said of the processing sector.

At the same time, processors must be given access to raw material through the relaxation of fleet separation policies. This was a necessity to make the offshore sector a viable industry in the 1980s and it is a requirement for the inshore sector. Inshore harvesters now fish in the same waters as large freezer vessels. They should operate under similar policies. This requires the end of DFO's fleet separation policy. Processors need to be able to plan their businesses to maximize returns to all inputs including raw material, labour and capital.

Ultimately, the structure of the province's industry must be better or equal to that of the other regions for us to compete. This implies that the industry must either garner the same or greater revenue or have the same or lower cost structure. Unfortunately, the

Newfoundland and Labrador industry appears to have a higher cost structure due to inefficiencies and receives a lower price for many products for the same reasons. This requires a concerted effort by the industry to find creative and cooperative solutions.

Some of these solutions relate to the products that are produced, the timing of sending products to market and the quality of products produced. The labour and capital advantage found in China means that we cannot compete head-to-head against the Chinese producer. The industry must collectively target niche markets. With a relatively small percent of the world's non-shellfish products, these fish must target high-end high value markets. The Chinese produce a twice-frozen product. One advantage to being close to the resource is that the industry can produce fresh or once frozen product.

Once the structural issues are resolved, the industry must refocus itself and determine the best means of marketing and selling product. United the industry would have a greater market presence and would be able to offset the consolidation that has occurred in the food service and retail sectors. On the surface, it would seem that this is unlikely to occur given the strong competition often exerted at the wharf for raw material. If the fleet separation issue is resolved, then processors could come together to jointly develop markets. In order to survive the global consolidation process, the major local players must therefore continue to pursue the expansion and consolidation focus that has occurred in Atlantic Canada. This consolidation, however, still results in the industry players being small operators relative to their major food service and retail customers. As

such, the industry must look beyond its borders and look at partnering with other companies in other markets.

China offers a significant opportunity for the industry both as a competitor and as a market. Processors must look at China as having an advantage in products that require high levels of labour. This is China's competitive advantage and processors must be cognizant of this fact and take advantage wherever possible. There are minimum processing requirements in this province for most species; however, the rules are flexible and provide a compromise between often opposing strategies.

The recent concerns over the safety and quality of products coming out of China should be a concern for producers wishing to partner with Chinese companies. There could be longer term implications for companies doing business in China. That being said, food safety concerns could provide local producers with a competitive edge against Chinese products. Suppliers are likely to become concerned about liability issues and consumers about the potential health impacts.

China offers significant opportunities as a market. As incomes grow in this nation, the demand for seafood will increase. There are still significant impediments to doing business in China; however, a patient businessman can reap significant rewards.

On a positive note, the Newfoundland and Labrador industry has begun an adjustment process despite the rigid policy and operational structure found. Some processors have begun to see China as a market. As previously indicated, China provides a significant growth opportunity for the industry and some processors have begun to take advantage. China has the potential to consume all products produced here in this province and more. As a small player, our industry could benefit greatly by targeting production and the sale of products to niche markets.

The solutions to the industry's problems are complex and will require concerted effort by the players to work together. Government policies must be changed; however, governments cannot change its policies without industry support. Without change, the industry will likely be overtaken by international forces. The result could be the demise of the processing sector and the expedited death of many rural communities.

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Appendix I
List of Federal and Provincial Regulations

List of Federal Acts and Regulations: As listed on the Department of Fisheries and Ocean Web Site: http://www.dfo-mpo.gc.ca/communic/policy/dnload_e.htm: Accessed on January 18, 2007.

1. Atlantic Fisheries Restructuring Act
2. Canada Shipping Act
3. Aids to Navigation Protection Regulations
4. Boating Restriction Regulations
5. Competency of Operators of Pleasure Craft Regulations
6. Eastern Canada Vessel Traffic Services Zone Regulations
7. Pleasure Craft Sewage Pollution Prevention Regulations
8. Private Buoy Regulations
9. Sable Island Regulations
10. Small Vessel Regulations
11. Vessel Traffic Services Zone Regulations
12. Canada Shipping Act, 2001
13. Coastal Fisheries Protection Act
14. Coastal Fisheries Protection Regulations
15. Department of Fisheries and Oceans Act
16. Financial Administration Act
17. Fisheries Act
18. Aboriginal Communal Fishing Licences Regulations
19. Atlantic Fishery Regulations, 1985
20. Fish Toxicant Regulations
21. Fishery (General) Regulations
22. Foreign Vessel Fishing Regulations
23. Marine Mammal Regulations
24. Maritime Provinces Fishery Regulations

25. Management of Contaminated Fisheries Regulations
26. Metal Mining Effluent Regulations
27. Newfoundland Fishery Regulations
28. Pulp and Paper Effluent Regulations
29. Fisheries Development Act
30. Fisheries Improvements Loan Act
31. Fishing and Recreational Harbours Act
32. Fishing and Recreational Harbours Regulations
33. Oceans Act
34. Basin Head Marine Protected Area Regulations
35. Eastport Marine Protected Area Regulations
36. Gilbert Bay Marine Protected Area Regulations
37. Species at Risk Act

Provincial Acts and Regulations As listed on the Department of Fisheries and Aquaculture website: http://www.fishaq.gov.nl.ca/department/acts.stm . - Accessed on January 27, 2007.

1. Fisheries Act (Schedule C of the Executive Council)
2. Fish Inspection Act and
3. Fish Inspection Regulations
4. Fish Processing Licensing Board
5. Aquaculture Act
6. Aquaculture Regulations
7. Fisheries Loan Act
8. Professional Fish Harvesters Act
9. Fisheries Restructuring Act
10. Fishery Products International Limited Act
11. Fishing Industry Collective Bargaining Act